ENGINEERING NEWS-RECORD

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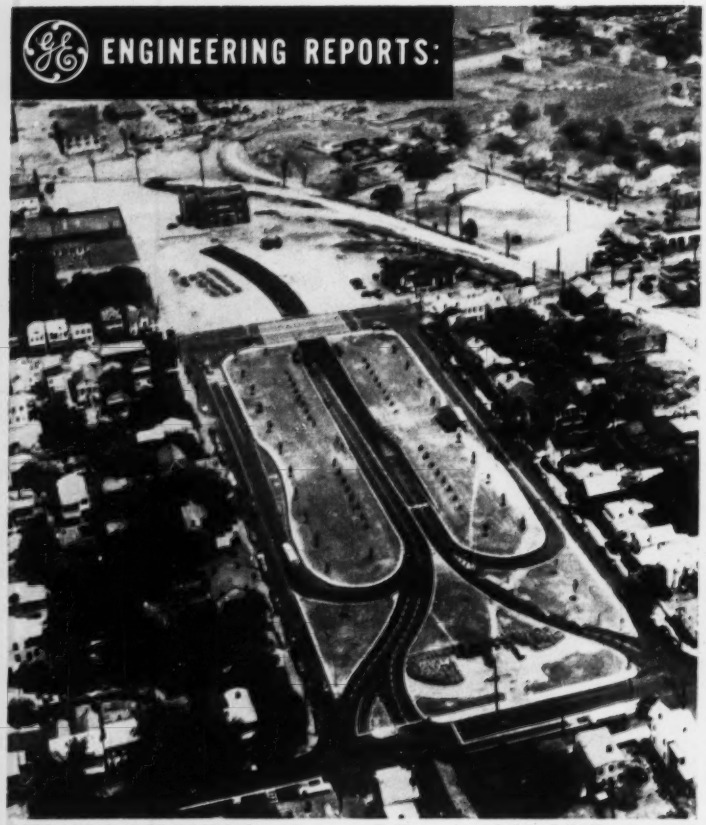
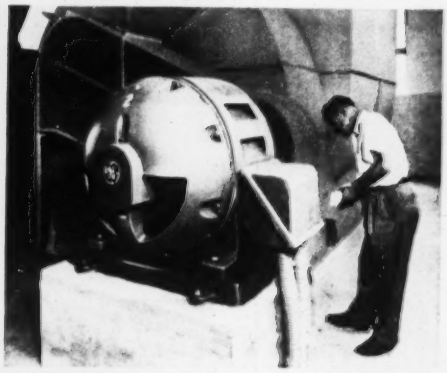


OPERATING ECONOMY for the new G-E equipped Norfolk-Portsmouth tunnel is provided by its variable-intensity fluorescent lighting system, Tri-Clad* ventilating-fan motors, centralized control, and reliable power supply.

G-E FLUORESCENT LIGHTING provides safer, more uniform, shadowless illumination. To avoid light-blindness at portals, intensity is increased during bright sunlight periods.



VENTILATION is provided by four exhaust fans, each driven by a G-E 2-speed, 250/40-hp motor. Motors run at high speed only in emergencies.

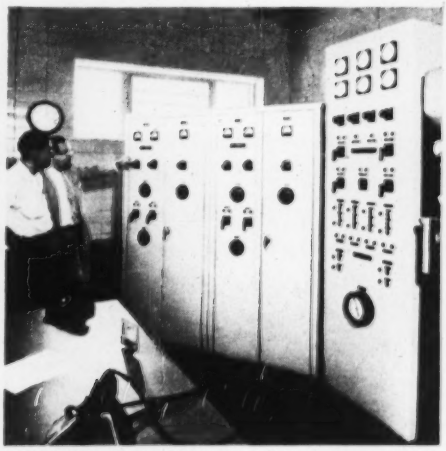
Continuous lines of light increase safety of new tunnel

G-E electrical system for Norfolk-Portsmouth Tunnel also features one-man control, reliable power supply

An outstanding feature of the 3350-foot tunnel, recently built beneath the Elizabeth River as part of a bridge-tunnel project linking Norfolk and Portsmouth, Va., is the electrical system that helps handle heavy traffic with greater safety and economy. The electrical equipment was designed by General Electric engineers working closely with the Elizabeth River Bridge Tunnel Commission, its consultants, Parsons, Brinckerhoff, Hall & Macdonald, who designed the system, and its contractor, Merritt-Chapman & Scott.

Let G-E engineers help your engineers or consultants on electric equipment for heavy construction projects. Contact your local G-E Apparatus Sales Office early in the planning stage. General Electric Company, Schenectady 5, N. Y.

*Reg. trade-mark of General Electric Co. 664-27



ONE-MAN OPERATION is a key feature of this main control panel from which lighting, ventilation, and two G-E unit substations are controlled.

Engineered Electrical Systems for Heavy Construction

GENERAL ELECTRIC

Wire Rope at Work—As you draw near New York City at the northern end of the 118-mile New Jersey Turnpike, this is the bridge that carries you high above the Passaic River. The picture, taken at a time when the bridge was near completion, shows two 146-ton girders for the main span being lifted simultaneously into place by Bethlehem Wire Rope.

These heavy steel girders made a tough lift, but no tougher than thousands of others entrusted to Bethlehem rope all over the country. Wherever there are heavy lifting or hauling jobs to be done, you will find Bethlehem rope right in the thick of things, hard at work. You will always know it by the black-and-yellow reel, the reel that tells you, "Here a good product is in service."

Bethlehem Steel Company, Bethlehem, Pa. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

Mill depots and distributors from coast to coast stock Bethlehem rope for the following industries and numerous others:
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or any other job...big or small

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Light-weight, sturdy Tilting Level for universal application.

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Engineers on important developments throughout the world depend on these inherently accurate WILD surveying instruments . . . Swiss precision designed for stability under adverse conditions, for sturdiness and for ease in operation . . . they provide lasting trouble-free service.

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Robert F. Boger
Publisher

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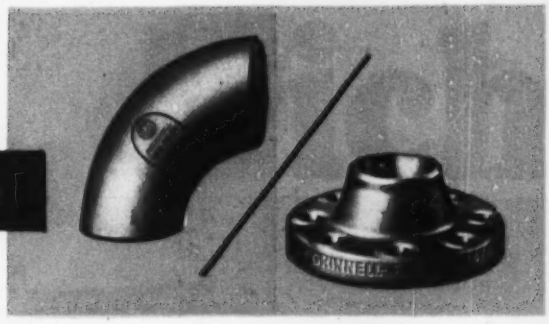

GRINNELL

STAINLESS STEEL WELDING FITTINGS and FLANGES

To help combat mounting costs in the installation and maintenance of piping systems where corrosive or certain other service conditions are involved, Grinnell offers a comprehensive range of welding fittings and flanges in stainless steel.

- **To prevent corrosive attack.**
- **To obtain adequate impact resistance at low temperatures and sufficient creep strength at high temperatures.**
- **To provide sanitary conditions.**
- **To avoid contaminating the product.**

Grinnell welding fittings and flanges are available in types 304, 347 and 316. These are in the chromium-nickel grades known as "18-8". The corrosion resistant properties of stainless steels are primarily due to the chromium content which ranges from 17% to 20%. The addition of nickel in ranges from 7% to 14% improves the corrosion resistance as well as the properties at elevated temperatures. A molybdenum addition of 2% to 3%, as found in type 316, increases the resistance to sulphurous and phosphoric acids, brine and hypochlorite solutions, and improves the general resistance to other corrosive liquids, as well as improving the physical properties at elevated temperatures. A columbium addition of approximately 0.4% to 1.0%, as found in type 347, creates non-susceptibility to carbide precipitation which can cause intergranular corrosion.

In addition to stainless steel, Grinnell offers welding fittings and flanges in carbon steel, nickel, Inconel, Monel, aluminum and brass.

Write for new booklet giving complete data on Grinnell stainless steel welding fittings and flanges. No obligation.

stainless steel welding fittings
Types 304, 347, 316

DESCRIPTION	SCHEDULE†	PIPE SIZE, IN.‡
90° Long Radius Elbow 45° Long Radius Elbow 180° Long Radius Return Straight Tee	5s, 10s, 40s, 80s	½ to 12
Reducing Tee	5s, 10s, 40s, 80s	¾ to 12
Cross (Straight and Reducing)	5s, 10s, 40s, 80s	1¼ to 12
Concentric Reducer Eccentric Reducer	5s, 10s, 40s, 80s	¾ to 12
Lateral (Straight or Reducing)	5s, 10s, 40s, 80s	1 to 12
Cap	5s, 10s, 40s, 80s	½ to 12
Lap Joint Stub End-Long	10s, 40s, 80s	½ to 12
Lap Joint Stub End-Short	5s, 10s, 40s,	½ to 12

† *5s is Featherweight, 10s Lightweight, 40s Standard, 80s Extra Strong.*
‡ *Larger sizes available on special order.*

stainless steel flanges

150 lb. and 300 lb. Steel Flange Standard *(Higher series available on application).*

DESCRIPTION	PIPE SIZE, IN.
Welding Neck Slip-on Lap Joint Threaded Socket Type Blind	½ to 24

150 lb. Corrosion Resistant Standard. *(For use with schedule 10s and 5s pipe. Rated at 150 psi at 500°F, 225 psi at 150°F, when used with full-faced gaskets).*

DESCRIPTION	PIPE SIZE, IN.
Buttwelding Slip-on Blind	½ to 12

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WHENEVER PIPING IS INVOLVED

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pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves
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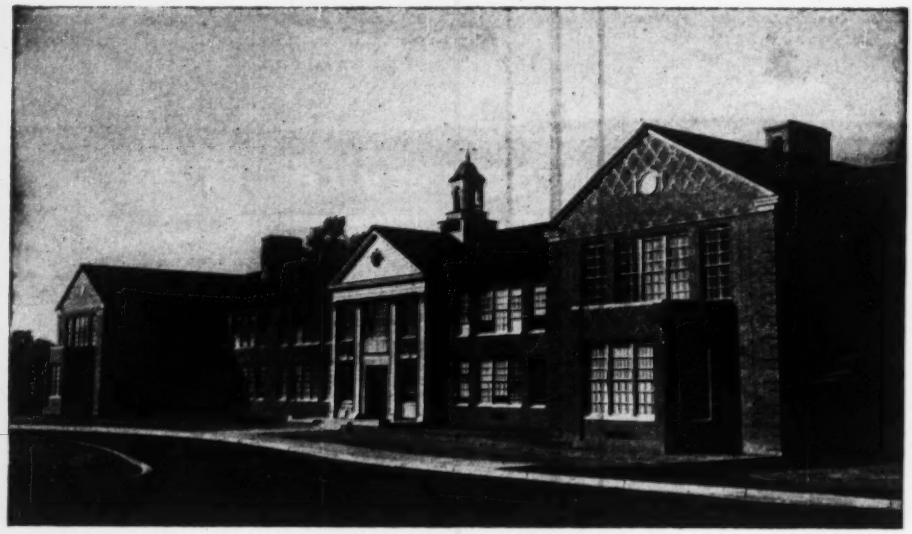

In Ladue, St. Louis County, Missouri, this new million-dollar school was built by Robert Paulus Construction Company.

to make wood LAST LONGER
treat it with MONSANTO PENTA

Lumber treated with penta will resist rot and insect attack far beyond the normal life span of untreated timber. Forced deep into the cells of the wood by pressure, penta makes the wood virtually time-proof. Rain and ground water can't wash it out. Properly formulated and applied, penta will leave your wood clean, paintable and dimensionally stable, if specified.

In public buildings, durability is a must. Horton Watkins High School, newly built in one of St. Louis County's finest residential sections, is assured many years of extra life. Nailing strips and sleepers, door frames, and other wood parts in the school are penta pressure-treated against decay and wood-destroying insects.

You build *permanence* in your work and save money for your client when you specify Monsanto Penta.

Information for contractors. This brochure, titled "Specify Penta," gives facts and figures on penta applications. For your copy, write: Monsanto Chemical Company, Organic Chemicals Division, 800 North Twelfth Blvd., St. Louis 1, Missouri.

Understripping of gym floor, as well as white-pine door frames, was pressure-treated to a 6# retention of penta solution.

Penta has wide usage possibilities. It is specified regularly by utilities, railroads, in heavy construction and in farm and home building.

MONSANTO
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SERVING INDUSTRY... WHICH SERVES MANKIND

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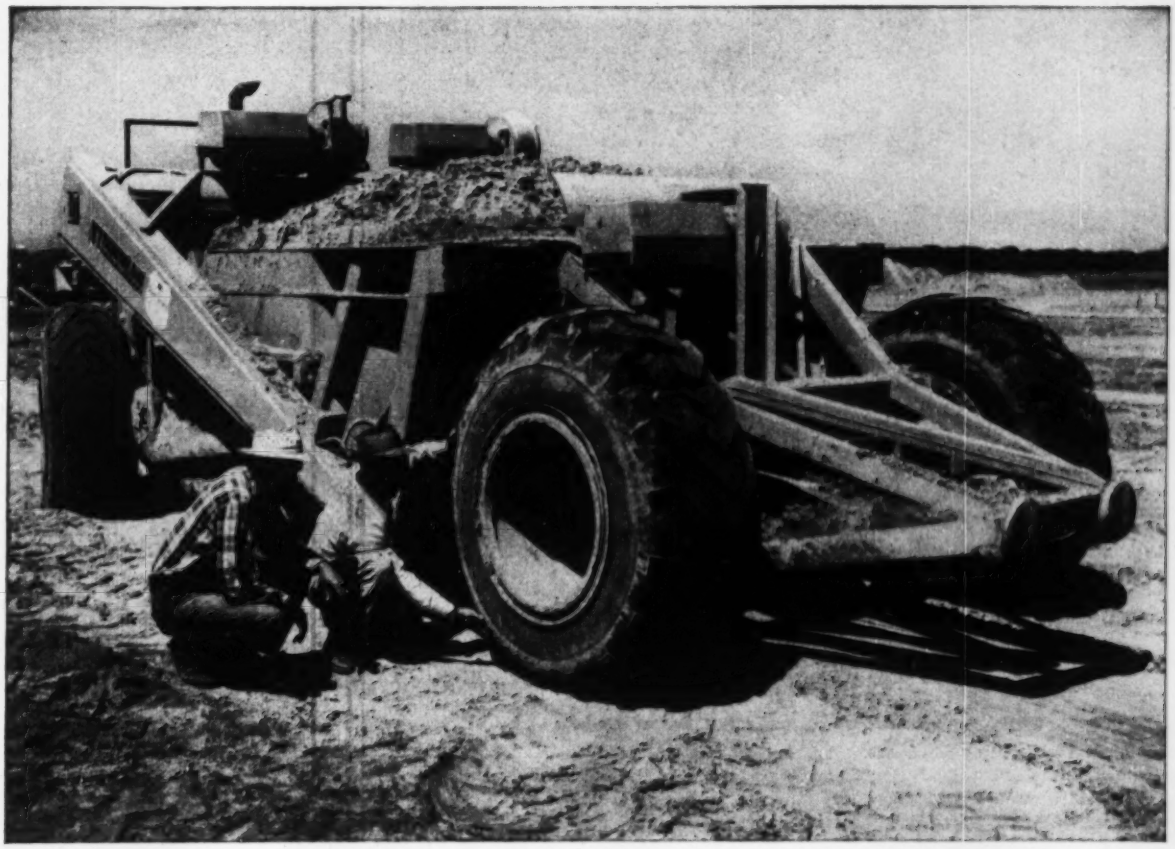

New Earth-Mover tires haul giant loads, yet float over sandy ground

FRANK T. HICKEY, INC., of Los Angeles is an earth-moving firm operating throughout southern California. The unit above is hauling 24 tons of sand fill for troop barracks at Fort Ord.

Plowing through sandy soil under a 24-ton payload, plus the weight of the equipment, would cause most tires to bog down and become useless. That's why this contractor mounts his machinery on new B. F. Goodrich All-Nylon 65" Special Earth-Mover tires. They are specifically designed to pull through loose, shifting soils without sinking in.

Special Earth-Mover tires do this because they operate at low air pressures that give greater flexibility. The tires conform more to the soil, rolling over it rather than digging into it. The cord body of the tire is made of nylon which stands the strain of this flexing action better than other materials.

Because extra-high cleats often have a tendency to churn the ground, Special Earth-Mover cleats are low and shallow. They provide positive traction, yet will not dig in and cause the tire to flounder. Your equipment stays on top of the earth and on schedule.

If your job calls for work in soft, sandy ground, you can get top traction and flotation by using this new tire.

B. F. Goodrich makes a complete line of cost-cutting tires for off-the-road service. See your retailer—he's listed under Tires in the Yellow Pages of your phone book.

Specify B.F. Goodrich tires when ordering new equipment

RESEARCH KEEPS B.F.Goodrich FIRST IN RUBBER

The B. F. Goodrich Co.,
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Please send name and address of my nearest retailer.

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"Our Dodge trucks just go and go!"

. . . says **CHARLES BENDA,** *Owner, Chuck's Excavation Service, Chicago, Ill.*

"Contract hauling and excavation work can be rough work sometimes. You never know from one day to another what your next job will be like. That's why I need trucks that can handle any kind of job that may come up. And Dodge is my choice down the line!

"That Dodge power is as steady as a mule. It has the ability to pull full loads out of deep basement excavations, and the dependability to keep coming back for more. My Dodge trucks are plenty economical, too. I haven't found any other make that can come close to Dodge for good gasoline mileage!"

Why new DODGE *"Job-Rated"* TRUCKS are a better buy for Construction Men

HIGH-POWERED FOR HEAVY HAULS!

Dodge gives you the might and muscle to move those big loads *in a hurry!* Seven hefty power plants, three brand-new—from 100 h.p. to 171 h.p. It's real economical power, too. High compression ratios, 4-ring pistons, chrome-plated top rings and a host of other features combine to help keep your gas and oil expense at rock-bottom levels. And extra-powerful dual primary brakes, in 1- through 4-ton models, assure safer stops with less pedal pressure!

BIG PAYLOADS FOR BIGGER PROFITS!

With a Dodge "*Job-Rated*" truck, you can haul man-sized loads on a small-sized budget! New, bigger load capacities on many models enable you to carry more money-making payload every time out. Moreover, those rugged Dodge frames, sturdy axles and extra-strong springs are built to withstand toughest use for years without breakdown. See your Dodge dealer for the full story on Dodge extra value. He's making mighty good deals right now.

DODGE

"Job-Rated" TRUCKS

Paved areas made smooth, colorful, resilient with

WALK-TOP

Economical...Factory-compounded in fast colors... Red, Black or Green. Long-Lasting...Easy to apply

Walk-Top gives a proved, uniform, protective, wear-resistant seal for all types of pavements.

In all parts of the country Paving Contractors and "Hot Plant" operators are now using Walk-Top to satisfy the demand for a smooth, colorful surface that is grit-free, resilient, and weather-proof. They have found that this easy-to-use material—applied cold—offers an economical method of sealing all surfaced areas.

This photograph shows the green walks on Bedloe's Island around the Statue of Liberty

Home-owners are proud of their distinctive "Walk-Top-sealed" driveways

FOR PLAY AREAS

Walk-Top seal is *standard* for thousands of school play areas throughout the country. In San Francisco, for example, over 2,000,000 sq. ft. of school playgrounds, both old and new, have been sealed with Walk-Top in the last two years alone. Other typical applications may be found in Akron, Pittsburgh, Washington, D. C., Providence, Fresno and Cincinnati. School and Park Authorities in these cities and in many others repeatedly specify Walk-Top.

WALKS AND PARKING AREAS*

Walk-Top is used extensively on all types of paving to provide a fast-draining, void-filling seal that is colorful, smooth and resilient.

FOR DRIVEWAYS

Walk-Top, easily applied cold over the old pavement, by brush or squeegee, gives a clean, enduring, colorful seal—at low cost.

WALK-TOP is available through Dealers and Contractor-Distributors throughout the country. Contact our nearest office for information.

WALK-TOP and Play-Yard Binder for Playgrounds—Laykold Wearcoat and Resurfacer for Tennis Courts—standards of quality for over *twenty* years.

**For oil-resistance ask for Colfix Jet Seal.*

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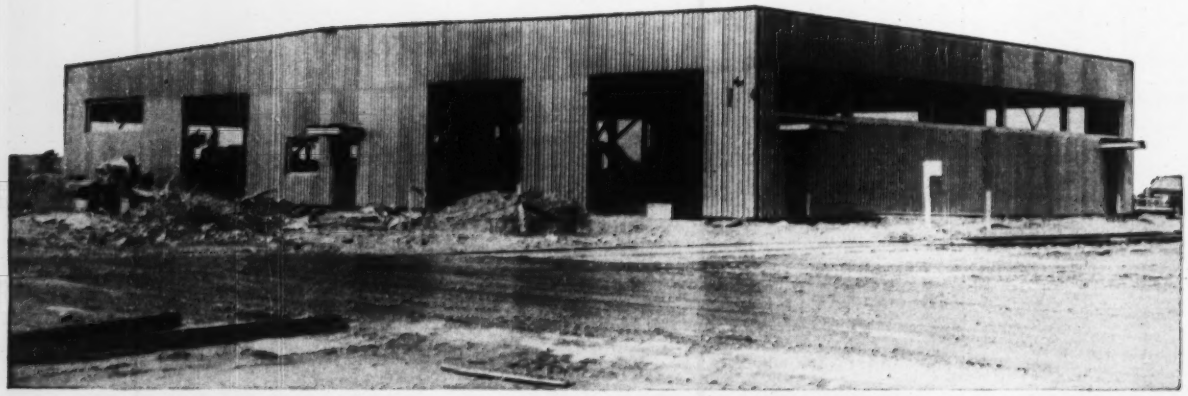
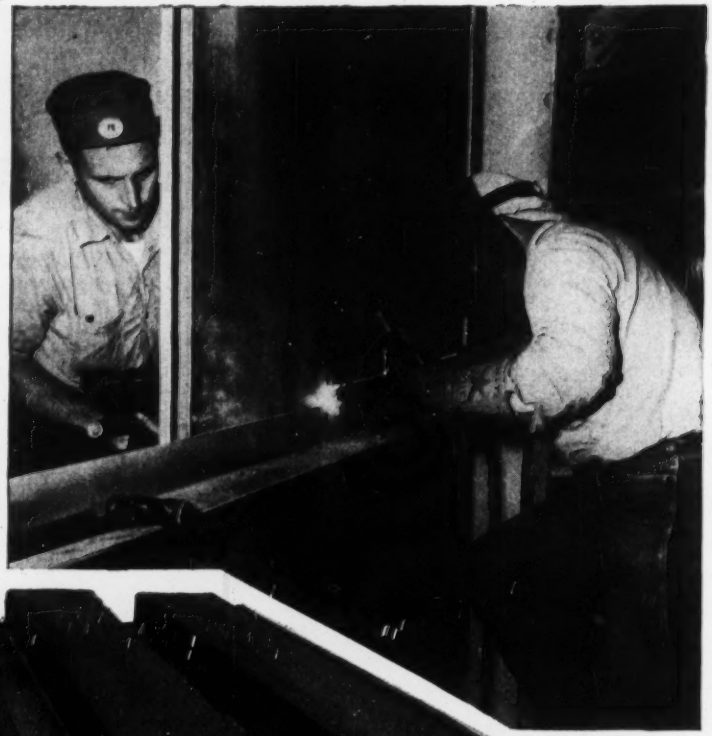
Insulated panels of U·S·S 17 (Type 430) mean fast, low-cost



WORKING UNDER ADVERSE WEATHER CONDITIONS, a crew of four installed 4005 square feet of insulated Stainless Steel panels on this building in less than eight working days. The panels were manufactured by H. H. Robertson Co., Pittsburgh, Pa.; installed by R. A. Steelman Co., Trenton, N. J.; designers were Walter Kidde Constructors, Inc., New York.



PANELS WERE INSTALLED by spot welding to the structural steel framework. Their light weight makes handling by a minimum crew possible.

CROSS SECTION of a complete panel for the fire station at United States Steel's Fairless Works shows the formed Stainless Steel exterior sheet, 1½" of insulation and the coated steel interior.

Stainless Steel construction at Fairless Works

4005 sq. ft. of panels installed by crew of 4 in 8 working days

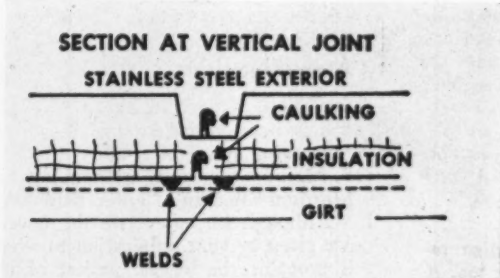
CONSTRUCTION with insulated building panels of U·S·S 17 (Type 430) Stainless Steel is gaining considerable momentum in the field of industrial building—such as power plants, factory office buildings, warehouses, etc. Architects and owners alike have been quick to recognize the advantages of light panel weight, long building life, minimum maintenance, low labor costs and fast erection in any type of weather.

The building shown here is a Stainless-panelled fire station at the new Fairless Works of United States Steel Corporation at Morrisville, Pa. The 66′ x 100′ structure contains 4005 square feet of insulated panels of 20 gage U·S·S 17 Stainless Steel.

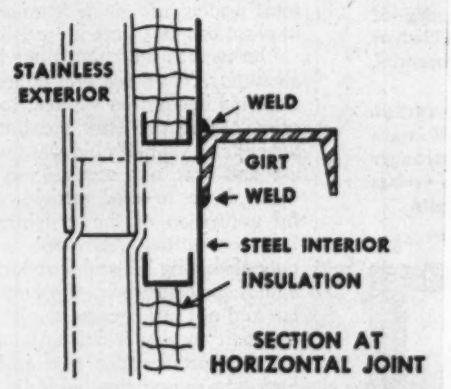
A crew of four men erected the panels under adverse weather conditions in less than eight working days. The panels, consisting of U·S·S 17 (Type 430) Stainless Steel exterior, 1½″ of insulation and a coated steel sheet interior, were attached to the structural steel framework by spot welding, a fast and strong method of installation. U·S·S 17 (Type 430) is readily available without CMP tickets.

Note the cross-sectional sketches of the horizontal and vertical joints. As indicated in the sketches, caulking is applied to the vertical joints prior to erection. This provides an excellent vapor seal and is therefore instrumental in reducing the over-all "U" factor. The cross section of the vertical joint illustrates how the lower panel is counter sunk to gain a tight flush joint at the lap.

A new book containing the latest information on construction with panels of U·S·S 17 Stainless Steel is now being distributed. For your copy, use the coupon below.



THESE DETAILS of panel cross sections show methods of making horizontal joint (below) and vertical joint (above). Such methods of joining, combined with the low" U" factor designed into these panels, produce an exceptionally well insulated building.



United States Steel Corporation
525 William Penn Place, Room 2813-Y
Pittsburgh 30, Pa.

☐ Please send me your new booklet on U·S·S 17 Stainless Steel for industrial buildings.

☐ Please arrange to have fabricators of Stainless Steel wall panels send me literature on their particular type of construction.

Name.....Title.....

Address.....

City.....State.....

United States Steel produces only the Stainless Steel sheet and strip from which panels of this type are made; the panels themselves are fabricated by a number of our customers.

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USS

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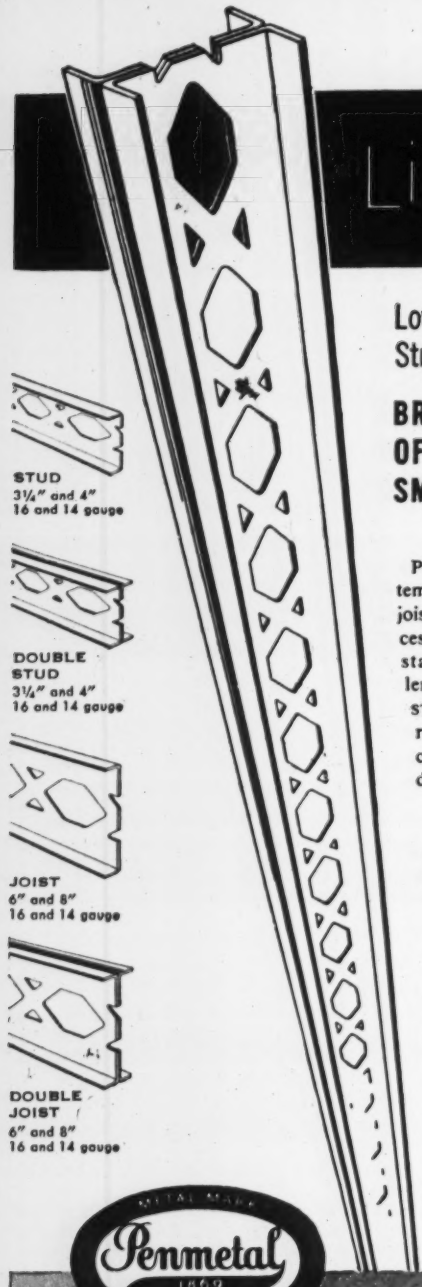

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Proved, practical design reduces installation costs, too. A high strength-to-weight ratio makes for easy handling and quick erection, without need for cranes or special skills. Open webbing simplifies the installation of pipe and conduit, speeds up the fastening of wire or clips for metal lath or any other surfacing material.

PENMETAL LIGHTSTEEL sections pay off with straighter, safer, stronger jobs, plus generous savings in both time and costs.

STUD
3⅛" and 4"
16 and 14 gauge

DOUBLE STUD
3⅛" and 4"
16 and 14 gauge

JOIST
6" and 8"
16 and 14 gauge

DOUBLE JOIST
6" and 8"
16 and 14 gauge

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1869

Lightsteel SECTIONS

provide structural stability . . . complete protection against warping, shrinkage, rot, termites. Fire safe — they cut insurance costs with ratings up to a full four hours. Catalog SS-22, tells the whole story, gives all facts, specifications and data. Write for your free copy.

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READER COMMENT

Two methods compatible

SIR: In his comment on the article, "Built-in deflections cut frame costs" (ENR March 26, p. 45), Prof. Winter's concern is with an increase in efficiency through taking advantage of the ductility of the material (ENR April 30, p. 10). The efficiency and economy under consideration in the original article are a result of a design technique. It is hoped the two criteria may work together in many instances.

R. W. WATERHOUSE
Frozen Ground Applied Research Branch
Snow Ice and Permarost Research Establishment
Corps of Engineers
Wilmette, Ill.

Ambuklao bids

SIR: Your March 12 issue (p. 68) carried an item on our Ambuklao Project concerning award of contract to Guy F. Atkinson Company and rejection of Morrison-Knudsen's "lower bid."

Although we appreciate the coverage given by your publication to what is probably the biggest project of its kind in the Far East and easily the biggest in the Philippines, we feel that the statement contained in the item that "Morrison-Knudsen's lower bid was recently turned down" without mentioning the reason might mislead some readers into giving it undesirable implications that have no real basis.

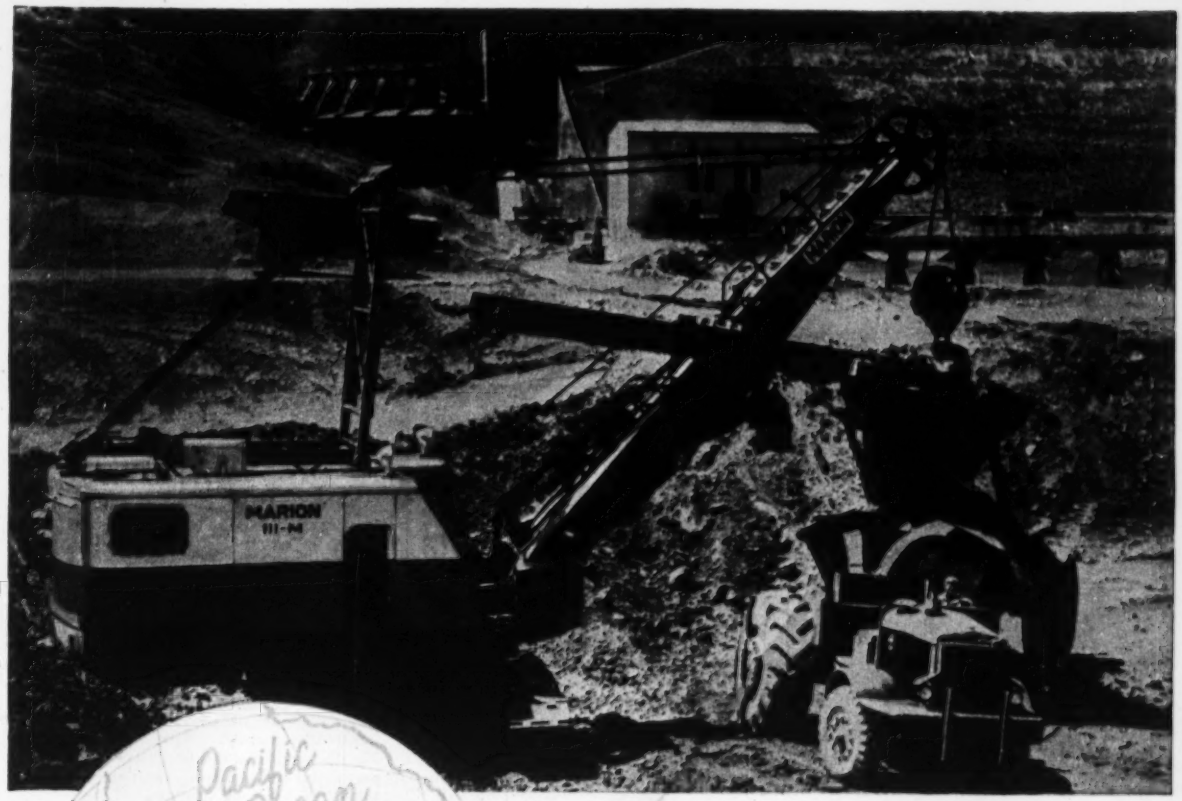
Our records show that three bids in all were received for this project, the third bid being from Vinnell, Inc., the others being the ones mentioned in your item. Vinnell's bid was the highest and was not received on time; hence, it was rejected outright. A careful evaluation of the remaining two bids proved that Atkinson's was the only qualifying bid and that Morrison-Knudsen's being lower was only apparent and not real because the latter bid on their own specifications and not on the specifications that had been issued to prospective bidders.

Our findings were concurred in by the Harza Engineering Company of Chicago, our consultants on this project, whose local representative, E. Rettig, stated in part:

"2. Of the three bids, only the one from the Guy F. Atkinson Company appears to meet to satisfaction the formal requirements . . .

"3. The Morrison-Knudsen International Co. has in its bid taken excep-

(Continued on page 14)



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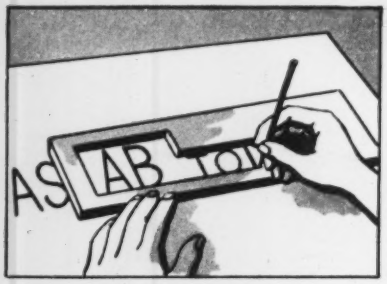
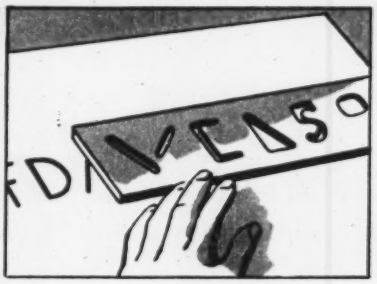
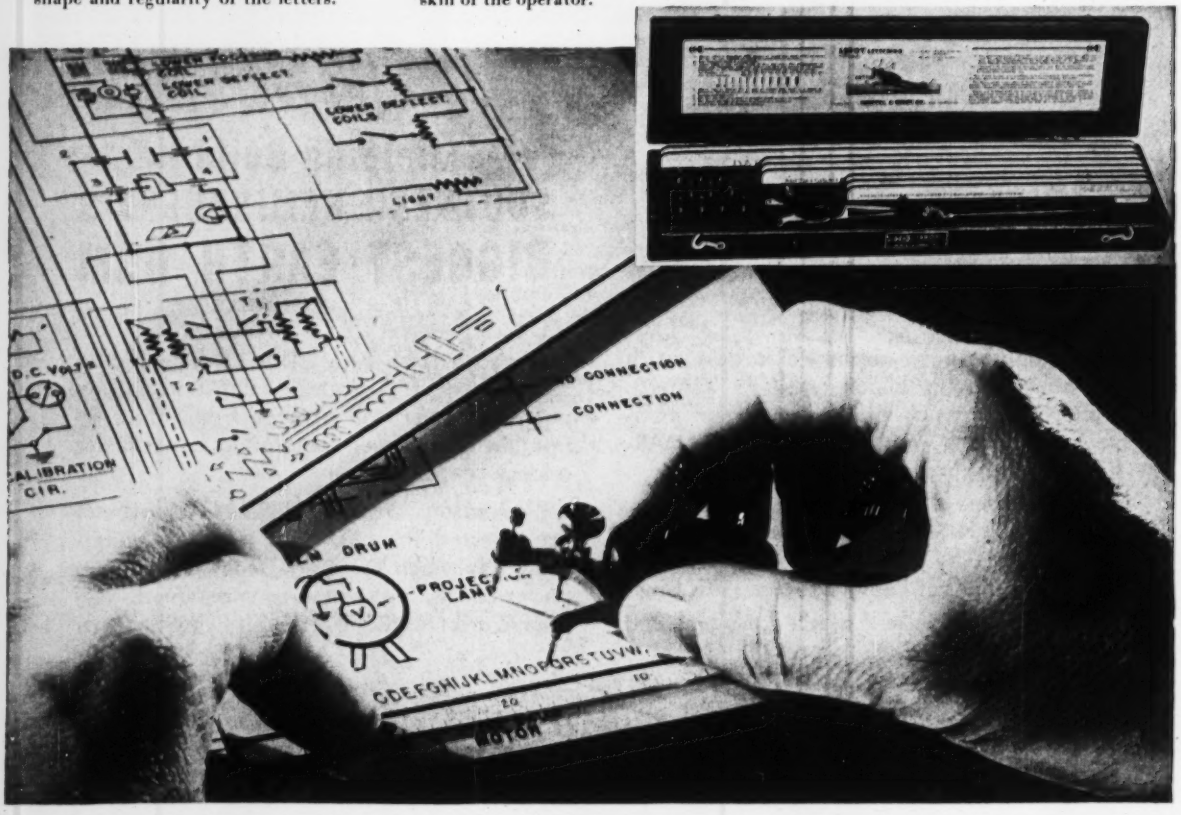




If the results of freehand lettering were always something to be proud of, there would be little or no need of special lettering aids. But as draftsmen know, freehand lettering is often irregular in appearance, and seldom can two men in a department letter exactly alike. Even as simple a device as a height guide helps considerably. Yet it fails in the important function of controlling the shape and regularity of the letters.

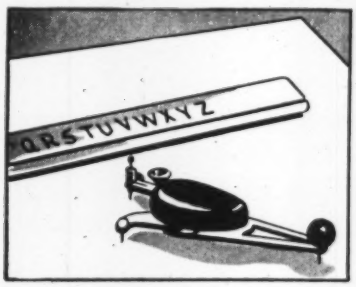
An obvious way of controlling shape as well as size is to use a stencil guide. To avoid the broken lines characteristic of stencils, guides were first devised consisting of cut-out portions of letters which could be combined to compose complete letters. However, they covered the work in progress, obscuring it from view, and the appearance of the finished lettering still depended largely on the skill of the operator.

To afford greater control, a stencil guide was developed on which all but a few letters were complete in outline. Shifting the guides with a shuttling motion permitted the breaks in the lines to be filled in. Like all stencils, these too covered up the lettering, and they also had to be supported slightly above the drawing surface so they could be shifted without smearing the work.



to LEROY® ... was bound to come!

The Right Angle



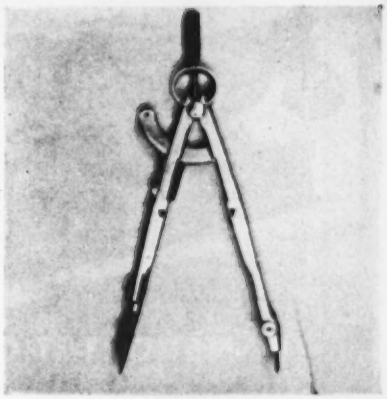
Instead of stencils, the LEROY Lettering Set has templates with grooved characters which guide the pen virtually by "remote control". In place of a hand-held pen, there is a movable scriber. It combines a lettering pen, a pin that fits in and follows the grooved characters, and a sliding pivot, and it holds them in triangular relationship. Because a straight groove in the template restricts the motion of the pivot, the movement of the pen is governed entirely by the movement of the tracer pin.

With the LEROY scriber, the lettering is done above the template where it is always visible and safe from smearing, instead of through a stencil. Each letter, numeral or symbol is formed completely with unbroken lines, without moving the template. Its size and shape are entirely controlled by the template grooves, so that rapid, uniform lettering is easy. By a simple adjustment of the scriber, either vertical or slant lettering is possible from the same template.

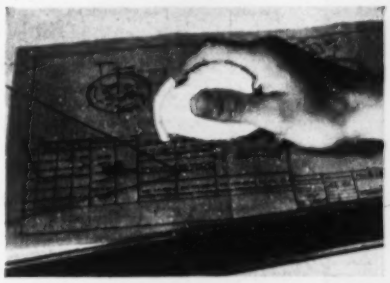
With a LEROY Lettering Set, you can draw capitals, lower case letters and numerals from a single template. You can form perfect letters on the first trial, and can develop speed with a few minutes' practice. No guide lines, no "roughing in", no erasing. You can be sure of uniformity throughout the drafting room, in pencil or ink.

There are LEROY templates and pens for every size and thickness of lettering normally required, as well as templates with engineering and scientific symbols and with special alphabets. K&E can also produce special templates for phrases, symbols or trade marks of your own design.

Ask your K&E Distributor or Branch to tell you about other LEROY features, or write to us for complete booklet on LEROY.



You will find "Quick Set" the handiest large bow combination you've ever used. It has a trigger-quick action for coarse settings plus micrometer adjustment for precise settings. Complete with interchangeable pen and pencil inserts for circles up to 12½" diameter in pencil and 12" diameter in ink.



Cut down on the clean-up with an ABC* Dry Clean Pad. Tiny gum eraser particles sift through the mesh of the pad. Sprinkle them in a light film over the drawing surface before starting work and you'll have no graphite smears. Use it the same way for final clean up. Contains no grit or abrasive.

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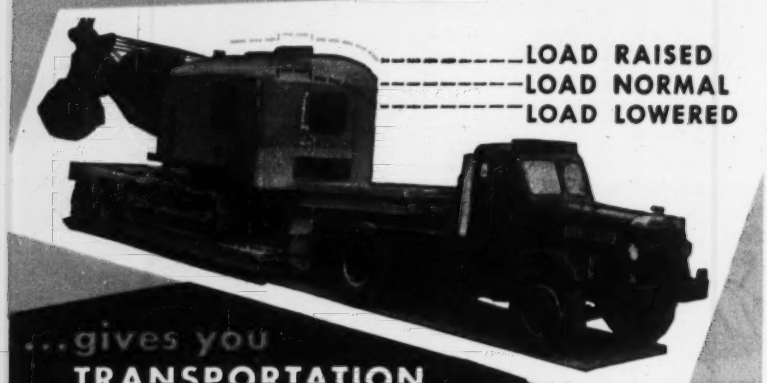

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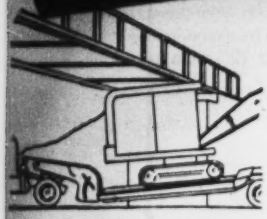

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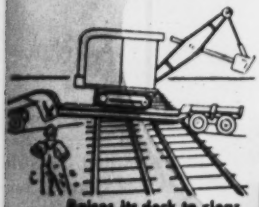

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READER COMMENT

tion to many specified requirements and, in fact, bid on a set of specifications prepared by the bidder.

". . . It seems to have been the bidder's intention to eliminate for himself all risks and responsibilities which a contractor is normally expected to shoulder.

"Under the circumstances, the apparent low bid by the Morrison-Knudsen International Co. becomes illusory and can not be compared with a bid in accordance with the requirements. . . .

"The bid by the Guy F. Atkinson Company appears to be in order and is recommended for formal consideration . . ."

The validity of our findings may be considered established by the fact that Morrison-Knudsen did not at any time protest against the rejectoin of their bid.

FILEMON C. RODRIGUEZ
General Manager
National Power Corporatoin
Manila, P. I.

CALENDAR

American Society of Civil Engineers, spring meeting, Casablanca Hotel, Miami Beach, Fla., June 15-19.

American Institute of Architects, Metropolitan Theater, Seattle, Wash., June 16-19.

National Society of Professional Engineers, Sheraton Beach Hotel, Daytona Beach, Fla., June 18-20.

Conference on road and street traffic control, Purdue University, Lafayette, Ind., June 22-24.

American Society for Engineering Education, annual meeting, University of Florida, Gainesville, June 22-26.

Conference on modern highways, Massachusetts Institute of Technology, Cambridge, Mass., June 23-25.

American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall Hotel, Atlantic City, N. J., June 28-July 3.

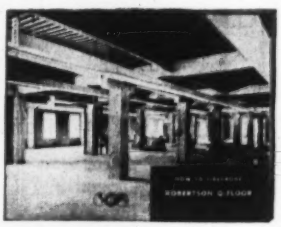
Summer program in Advanced Strength of Materials, M.I.T., Cambridge, Mass., July 6-17.

City and regional planning programs, Massachusetts Institute of Technology, Cambridge, Mass., Aug. 21-Sept. 4.

Joint meeting International Association for Hydraulic Research and Hydraulics Division of the American Society of Civil Engineers, University of Minnesota, Minneapolis, Sept. 1-4.

Write for these technical data books from H. H. Robertson's Q-Floor library

How to fireproof Robertson Q-Floor and Structural Steel



This booklet is an exposition of fireproofing methods employed when Q-Floor is used in conjunction with structural steel framing in a multi-story building and must meet local building code requirements. It covers most problems likely to be encountered by the designer and contains charts of typical code requirements, fire resistance ratings, and framing and ceiling details, both basic and with all combinations of extras.

Design and cost factors

With the use of this book you will find you can readily compute the cost of all types of structural floors with integral electrical wiring systems and compare them with Q-Floor. The study is based upon a typical multi-story building and is replete with charts and cost studies of all components to enable you to accurately estimate for your own vicinity. A critical analysis of this nature should be included in every architectural and engineering library.

Concrete fill on Robertson Q-Floor

This is the first of a series of booklets giving recommended practices for sub-contractors working on Robertson Q-Floor jobs. It contains detailed specifications for formulation, placement and curing of the fill, together with well-documented treatises on the nature and reactions of concrete. You will find a section on shrinkage cracking and how to control it, well illustrated with authoritative graphs and charts.

Today's finest buildings are built with

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- **Rubber business**—The experts are solid in their predictions that the U. S. will have a brand new chemical industry within a year—and that it will mean both new work and better products for construction.

  The new business venture will be privately owned synthetic rubber, and it will grow fast if Congress backs the Administration's decision to sell the government-owned synthetic rubber monopoly.

  There's money for construction in it: The nation right now requires 691,000 short tons of synthetic a year—and the capacity of all government and private plants at the moment is 54,000 tons short of that. Additionally, some of the government plants to be turned over aren't the best possible from the standpoint of economical operation.

  And a vigorous synthetic industry will mean increasing use of the product in rubber materials now used on machinery and in other applications.

- **Professional matter**—Engineers will do well to watch progress of a bill in the New Jersey legislature that would change requirements for a city engineer from "civil engineer and land surveyor" to "professional engineer."

  The particular measure was introduced to help out the administration of the city of Plainfield—but its implications are broad. In Plainfield, Mayor C. W. Crane wants to appoint Consulting Engineer M. B. Cooke (now serving as building inspector) to replace the late City Engineer H. Edwin Bush.

  City and state officials said they wanted to modernize a 1926 law limiting such city jobs to "duly licensed civil engineer and land surveyor," because the job requires administrative and executive abilities almost to the exclusion of surveying or civil engineering work.

- **Money for Central Valley**—Determined to get control of the vast Central Valley project, California legislators are studying an interim report recommending purchase of the project (from the Bureau of Reclamation) on the installment plan.

  In the report, the California Water Project Authority figured that total capital costs of the project—including Folsom Dam—would be $456.1 million, and that an initial down payment, plus regular payments thereafter (based on revenues from sale of water and power) could repay the U. S. government without strain on the state's finances.

- **Shelter plans**—Not at all dismayed by the fact that the city itself has never been able to promote even cross-town through streets or tunnels, New York realtor William Zeckendorf has come up with a plan for a series of "superstreets" across midtown Manhattan.

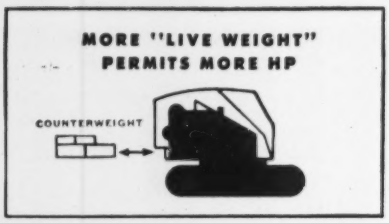
  Says Zeckendorf: They would lessen the cross-town traffic snarl, and, if built as tunnels, would provide bomb shelters as well.

Before you buy:

COMPARE NET HP!

This LS-85, despite tough, big-chunk rock, has been operating over 1200 hours without requiring one replacement part!

Don't judge available power by engine model only ... NET hp is what adds up to extra profit!



COMPARE shovel-cranes with and without counterweight. That test spotlights the size, weight and heft built into the working parts and structural members. You'll find the LS-85 has more "live weight" than comparable ¾-yard shovel-cranes.

Greater net horsepower assures faster, deeper digging. Bigger loads are handled without stalling. For example: the diesel driven heavy-duty ¾-yard LS-85 packs 92 net hp. That's more power than comparably-sized competitive rigs can safely use. It's why the LS-85 has more digging force behind its bucket teeth . . . why it cuts so smoothly . . . hoists and swings without a pause.

Use of greater net hp is practical because of all-welded, stress-relieved construction *and extra "live weight."* This *extra live weight* is in heavier, sturdier working parts and structural members—rather than a heavier counterweight. All this means year-after-year service and low maintenance costs. So whatever you do, don't compare power by the engine model only—CHECK *NET* HP.

For more facts on the LS-85, ask your distributor, or write for Catalog 2317. For the complete line, request Catalog 2373.

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WASHINGTON OBSERVER

Truce in Korea may have an impact on construction specifically as well as on business and politics generally.

There'll be some reconstruction in Korea itself. Most of the major construction—highways, bridges, ports, and the like—has already been done by the Army. But the United Nations Korean Reconstruction Agency (ENR May 7, p. 23) will do some building of homes, hospitals, factories and other such civilian structures.

Truce could mean let-down in business activity at home. Administration planners—headed by the new Council of Economic Advisers—are beginning to assemble anti-recession gimmicks and ideas from the various bureaus—just in case.

The economic council will have a bigger role in such planning than it had under the Democrats. New council chief, Arthur Burns, will report directly to Eisenhower. Under Truman, the council was a promoter of Democratic political policies; under Eisenhower, the council will try to become for the first time the watchdog of the business climate that Congress had in mind when it created the agency in 1946.

This is the year to start building an atomic power plant, says Rep. Sterling Cole, chairman of the powerful joint Committee on Atomic Energy. Cole wants industry to build the plant, but says the government should go ahead if industry won't. Announcement of a successful "breeder" of atomic energy means that such power plants would have no fuel costs at all after initial investment, the congressman thinks. (That's true only if you assume that processing spent fuel can be carried to operation.)

Another incentive: New Savannah River plant is already producing fissionable material, thus upping available supplies for military and civilian use.

•

Three more agencies are getting their taste of congressional economy. Up for action in the House are construction funds for the Atomic Energy Commission, the Tennessee Valley Authority and the Veterans Administration. The outlook:

AEC—Eisenhower's paring of $166 million from Truman's $436.3 million will be okayed. Indeed, some further cuts, small ones, may be made.

TVA—Steam plant construction is in for a real fight, may be voted down by the House.

VA—The $92.3 million for hospital facilities will stand.

•

Naming of Marvin C. Nichols as Reclamation Commissioner is in a snag. Eisenhower has hit Nichols up for appointment, on Secretary McKay's recommendation, for more than a month. But White House aides are blocking the Texas consulting engineer's appointment. Big reason: He was an adviser to the Democrats on operations of the government's Nicaro nickel oxidation plant in Cuba—operations that have been under serious attack.

•

A "watchdog sub-committee" to keep an eye on Interior Department has been set up by the House Interior Committee. Idea is to pick up ahead of time such snarls as those which developed over the Alaskan Eklutna hydro project. There, the Democrats were trying to spend more than Congress authorized.

Two big waterway projects are hitting new delays.

Federal Power Commission will hear more arguments on St. Lawrence power project. New hearings are designed to head off threat of opponents to take to court, the license FPC granted to New York State.

FPC is being asked to delay hearings on the Snake River proposed development by Idaho Power Co. They are supposed to begin July 7.

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to architects and engineers

SELLING STOCK PANEL FLOOR GRATINGS to be cut to fit in the field creates the impression of substantial savings since the cost of cutting and fitting is not included in the original grating price.

COSTLY FIELD CUTTING AND FITTING added to the original stock panel price can equal or better the final installed price of a floor grating tailor-made at the factory—shipped with each panel plainly marked with a number to insure quick, easy installation.

THERE IS NO COMPARISON between the appearance of the symmetrical well-integrated pattern of a custom-made installation and a haphazard, makeshift field installation from stock panels.

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3. Each panel is plainly marked with its number to insure quick, easy installation.
4. The entire platform is laid out on our shop floor. Overall dimensions and obstruction openings are checked against shop drawings.
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REMEMBER THE NAME BORDEN is your assurance of the very finest floor grating at the lowest cost. Borden has available stock panels but recommends them for emergency use and special extenuating circumstances only. Before you order, check the entire cost of your grating installation. Then specify BORDEN.

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High court reverses lower: Ohio Turnpike to be concrete

State court ruling confirms action of commission in asking concrete bids only; way cleared for re-advertising contracts

In an action of far-reaching consequence to construction men and public officials, the Ohio State Supreme Court last week reversed a lower court, and ruled that the Ohio Turnpike Commission was within its rights in taking bids for concrete pavement only for the planned 241-mi highway.

The high court's 7-0 decision meant that the commission could stick by its original decision to pave the turnpike with concrete and does not need to consider taking alternate bids on asphalt paving. At the same time, it cleared the doubts of many Ohio municipal and county officials, who feared that their discretion in specifying many types of material for all classes of public-works projects would be lost.

And the ruling put an apparent end to a year-long battle that had involved many trade and professional groups, charges of fraud and undue influence, and such a spate of violent feelings, words and legal complications as to prompt the remark from one of the participants that: "The turnpike should be called the Blackstone Turnpike. It is probably the only road in history that could have been paved entirely with legal briefs."

One immediate result of the decision was the jubilant announcement from commission headquarters that projects canceled because of the legal complications would be re-advertised immediately, so that first new contracts could be awarded on June 30, the rest within 16 weeks thereafter.

• **Cause for action**—Crux of the extremely complicated legal maneuvering surrounding the case was a recommendation (ENR Sept. 13, 1951, p. 28)—accepted by the commission—that portland-cement concrete be used to pave the Ohio Turnpike. The J. E. Greiner Co. of Baltimore, consulting engineers to the commission, made that recommendation after completing an engineering analysis of comparative types of paving that indicated—the consultants said—that construction costs of such a rigid-type pavement would total $53 million, against $55.7 million for flexible type.

After receiving this recommendation, the commission later rejected efforts by asphalt interests to submit competitive bids for the work. And the commission's action was then challenged in Ohio Second District Court of Appeals (ENR Nov. 27, 1952, p. 24) in a suit filed by R. H. Shafer, president of the Ohio Road Improvement Co.—which operated six asphalt plants along the route of the turnpike.

Shafer charged that bidding was limited to portland-cement concrete because of a "preconceived plan" between T. J. Kauer, commission chairman, and the Greiner Company—citing Kauer's previous connections with the American Concrete Pipe Assn. and Wire Reinforcement Institute. Going further into the matter, Shafer produced alternate plans for roadway design, which he claimed showed that asphaltic concrete would cost less than portland-cement concrete.

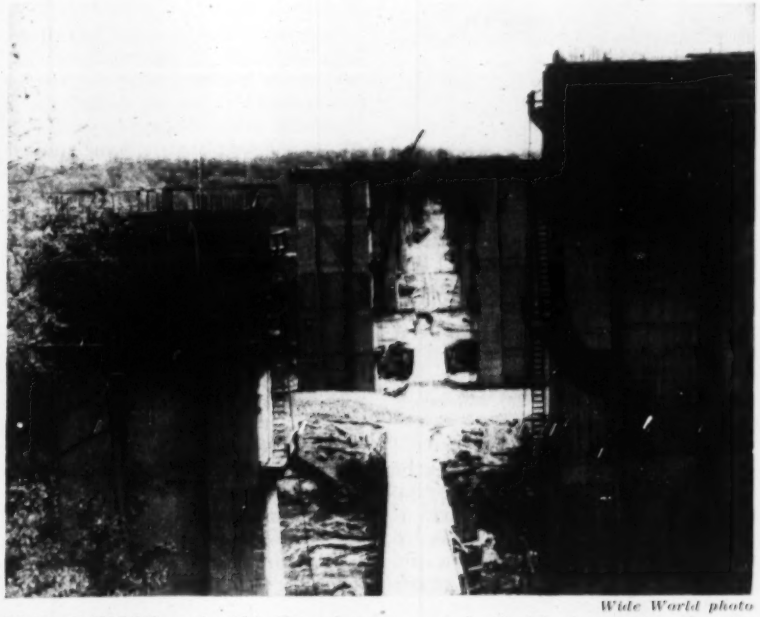
Officials of the Asphalt Institute and of many contracting firms testified on either side of the argument—for and against.

• **Lower court decision**—After many weeks of hearings, an appeals court referee and then the court itself (ENR April 2, p. 21) ruled in favor of the asphalt interests.

The appeals court said the turnpike commission was obligated to allow competitive bidding for both forms of paving on its road.

That ruling caused immediate confusion. While commission attorneys prepared an appeal to the state's highest court, its engineers began the task of withdrawing all existing calls for bids, and of redrawing all plans to permit alternate bidding.

Meanwhile, lesser governmental units throughout the state began to have serious doubts of their own powers in similar matters on public construction—and the possibility of enormous delays and expenses in all public works within the state were voiced at meetings of officials, and by the Ohio Society of Professional Engineers, which entered a brief with the supreme court, siding with the commission on the ground that the



Wide World photo

BRIDGE WORK on the Ohio Turnpike route went ahead while the question of paving was being argued in the courts. These piers are for twin bridges which will carry the toll road in both directions across the Cuyahoga River Valley at Peninsula.

lower court's action would nullify the judgment of professional engineers.

• **Supreme court speaks**—In reversing the lower court action, the supreme court said that the turnpike commission is subject to only one restriction in its selection of materials: that it act in good faith and avoid any abuse of its discretion. It noted that the commission had not been charged specifically with bad faith or abuse of discretion and that the record failed to disclose any such allegation.

The court took official notice of the fact that the state legislature, in a special session six days after the turnpike commission had announced its selection of portland-cement concrete, refused to amend the turnpike act and require alternate bids. "This action," commented the court, "was indicative of the legislative intent that the commission have wide discretionary powers in the selection of materials."

And the tribunal added that it could not find evidence of conspiracy between Mr. Kauer and concrete interests—a charge noted by the lower court referee. "It would be but natural," said the opinion, "that Mr. Kauer—with many years of experience in construction of highways—should have formulated some convictions as to the relative merits of building materials."

• The decision

The following excerpts from the Ohio Supreme Court decision contain the salient points on which the turnpike commission's right to limit bidding to concrete paving was sustained:

• "We find nothing in Section 1205 (K), General Code, or in any other portion of the Ohio Turnpike Act which directs or requires the commission to draw designs, plans and specifications for construction of this highway by the use of alternate materials. On the contrary, the statutes above quoted vest broad discretionary powers in the commission. The power to construct the turnpike and to make and enter into all contracts and agreements necessary to the performance of its duties necessarily includes the right to exercise discretion."

• "It is the right and duty of the commission through the exercise of its discretion to determine the plans, specifications and materials. There is no provision requiring alternate bidding. The only restraint upon the exercise of discretion by the commission is that which the law imposes upon all administrative bodies, viz., that it act in good faith and not in abuse of its discretion."

• "The referee specifically found that there was no preconceived plan among the commission, its chief engineer and its consulting engineers that only portland cement pavement should be considered. In other words, the charges and innendoes leveled at the chief engineer are not charges of bad faith against the commission. Furthermore, the commission is not bound to adopt a type of construction and to use a particular material merely because such construction would be less expensive than some other type of construction. Cost alone is not controlling. The commission would be remiss in its duties if it adopted a cheaper type of construction notwithstanding its judgment that a more expensive type would be worth its cost and would better serve the intended purpose."

• "The charge that the material chosen by the commission is controlled by a monopoly was wholly unsupported and merits no further comment."

• "No bad faith having been shown, the court can not substitute its judgment for that of the commission. This would be true even though the commission may have erred in judgment. Error of judgment does not invalidate discretion, exercised in good faith."

Bay crossing

San Francisco will get a $200-million structure

California legislation has been signed authorizing construction of another crossing of San Francisco Bay. Estimated to cost $200 million, it will be financed by revenue bonds to be paid from toll revenue on the new structure as well as from the San Francisco-Oakland Bay Bridge.

Authorization for the project, which must be approved by the Army Engineers, ends a seven-year legislative controversy over location of the span. The so-called southern crossing was decided upon, linking San Francisco's Army Street with Bay Farm Island in Alameda County south of Oakland.

The legislature voted $1.5 million for engineering surveys, expected to take about a year. Appropriation bill and authorization measures will be effective Sept. 9.

The crossing, preliminary surveys indicated, will consist of a system of causeways and tubes with connecting freeways on each side of the bay as suggested in the Army-Navy Board report of 1947 and elaborated on in a 1948 state Public Works Department report. Progress on the crossing has been stymied by political differences between San Francisco and East Bay representatives (ENR April 9, p. 25).

Building authority

N. J. State Building Authority is held invalid; violates debt limit

The New Jersey State Building Authority was put out of business this week by a 5-2 decision of the State Supreme Court, which held that all contracts and leases into which the authority had entered were null and void.

The majority of the court held that the power exercised by the State Building Authority violated debt limits set up in New Jersey's Constitution.

The authority originally was set up to construct a new state office building on West State Street, Trenton, adjoining the present State Capitol. Its scope was later expanded to include other projects.

So far it has issued bonds totaling $675,000 for construction of 12 state police barracks and an administration building for the State Department of Education. It had on the drawing boards, plans for other projects totaling more than $4 million.

The decision came just two weeks after the Supreme Court had upheld the constitutionality of the State Highway Authority, whose bond issuing privilege had been challenged in a similar taxpayer's suit. The court pointed out, however, that the highway authority's bond issue had been approved in a statewide referendum, whereas the building authority's bonds were never submitted to the taxpayers for a vote.

Neither Gov. Alfred E. Driscoll nor State Treasurer Walter Margetts had any immediate comment on the Supreme Court ruling. A spokesman in Margett's office, indicated that substitute finance plans are being studied.

The biggest project started to date by the authority is an administration building on the campus of the State Teachers College at Hillwood Lake; contracts were awarded in April.

180 Virginia industries take action on pollution

Sixty-five percent of Virginia's industries have reduced their pollution load on the state's streams since creation of the State Water Control Board in 1946, Ross H. Walker, a board member, reported at the annual convention of the Virginia Industrial Wastes and Sewage Works Assn. in Richmond.

Revealing that 180 industries have reduced their pollution either by process change or by treatment, Walker said most of the remaining 35% are small manufacturers who do not present serious problems.

SUSPENSION BRIDGE with 2,000-ft main span, 150-ft vertical clearance, will cross the Delaware at Philadelphia.

Bids asked for Delaware River bridge

$90-million suspension span to ease traffic burden on nearby 27-year-old Philadelphia-Camden crossing

The Delaware River Port Authority is taking bids for the construction of two river piers for a second crossing of the Delaware between Philadelphia, Pa., and the New Jersey west shore.

Located about 2½ miles south of the existing suspension bridge between Philadelphia and Camden, the new span also will be of the suspension type. Bids will be received up to June 22.

Total cost of the new bridge is estimated at $90 million, of which $80 million will be for construction alone. It will be financed by revenue bonds backed by toll receipts.

The existing bridge, opened to traffic in 1926, was of considerable engineering interest at the time because of its long span—1,750 ft—and its load-carrying capacity—six lanes of highway traffic plus two tracks for surface cars and two tracks for subway trains. The tracks for surface cars were never installed. Instead, the roadway was widened to eight lanes in 1948 to handle the increasing volume of highway traffic more expeditiously.

By 1950, it became evident that the capacity of that bridge was inadequate; traffic totaled 28 million vehicles in the twelve months ended Feb. 28, 1953, and was increasing at an average rate of 2 million vehicles annually. A new crossing was imperative.

The Port Authority retained Modjeski & Masters and Ammann & Whitney as consulting engineers to design and supervise construction. The former also was to plan the Philadelphia connections, and the latter, the New Jersey approaches.

A traffic analysis made by Coverdale & Colpitts indicated that the new crossing should be located 2½ miles downstream from the existing bridge—between Packer Ave. in Philadelphia and the city of Gloucester, N. J.

Present plans call for a suspension bridge with a central span of 2,000 ft and 770-ft side spans. Vertical clearance at the center will be 150 ft.

The roadway will be 79 ft wide between curbs, providing seven highway lanes. Traffic lights at 1,000-ft intervals will assign the three central lanes in accordance with traffic needs during peak hours. The floor system was designed for H20-S16 loading.

Piers for the two main towers will be constructed on reinforced concrete open-dredged caissons, founded on firm material at 104 ft below low water level on the Philadelphia side and about 75 ft below on the Gloucester side. The steel towers will extend to a height of 377 ft above the river.

The suspension structure is designed to resist safely a 35 psf static wind pressure, corresponding to a wind velocity of 100 mph. It will have open stiffening trusses, trussed floorbeams and a double system of lateral bracing to provide a high degree of vertical and torsional rigidity.

Contractor can profit, city can save by incentive contract on tunnel job

Unsettled wages for compressed air workers and unforeseen conditions in subsurface work have led New York City's Department of Public Works to let an upset price, sliding scale contract to S. A. Healy Company for a 5-mile length of tunnel on Bowery Bay Sewage Treatment Works Extension in the Borough of Queens. The earth and rock tunnel will carry a sewer line varying from 66 to 96 in. in diameter.

Healy was low bidder at $13,898,325. But the city's latest cost estimate is $10,600,000. The contract, therefore, was modified in such a way that any saving due to a break on labor rates and production will benefit the city as well as the contractor.

The most Healy will receive is his bid price (except, of course, for possible extra work items). However, if he can trim the job's actual cost to below 90% of his bid price, he stands to make a bigger profit; and the city will share in the savings. The difference between actual cost and 90% of bid price will be split in this way: the city will retain 75% up to $1 million; then it will keep 50% of the remaining balance.

• **Example**—If, as an illustration, the job were to be done for 90% of the $10,600,000 estimated by the city, its true cost to the contractor would be $9,540,000, instead of $12,508,492.50 (90% of his bid price), the point at which profit sharing begins. By dividing the difference between these two figures ($2,968,492.50) according to the formula, the city would realize 75% of $1,333,333.33, or $1 million. Then it would retain 50% of the rest, or half of $1,635,159.17.

Savings to the city would total $1,817,579.58; thus the reduced cost of the job due to contractor efficiency would be that much under the bid price, or $12,080,745.42.

Healy, if he does the job for exactly 90% of his bid price, stands to make 10%, or $1,389,832.50. If it costs him more to do the work than he has

estimated, his profit diminishes, of course.

• **Sliding scale provisions**—But, to follow the example, if he can do the job for just what the city says it should be ($10,600,000 including a normal profit), cost to him might be only $9,540,000, and his profit benefits by the sliding scale arrangement. That is, he gets the $12,080,745.42 the city pays and his profit is $12,080,745.42 minus $9,540,000 which equals $2,540,745.42, or over 20% of the reduced cost.

Public Works Commissioner Frederick H. Zurmuhlen proposed the modified contract when the low bid came in over his department's estimate. He is banking on its profit incentive for the contractor to result in cost savings for the city.

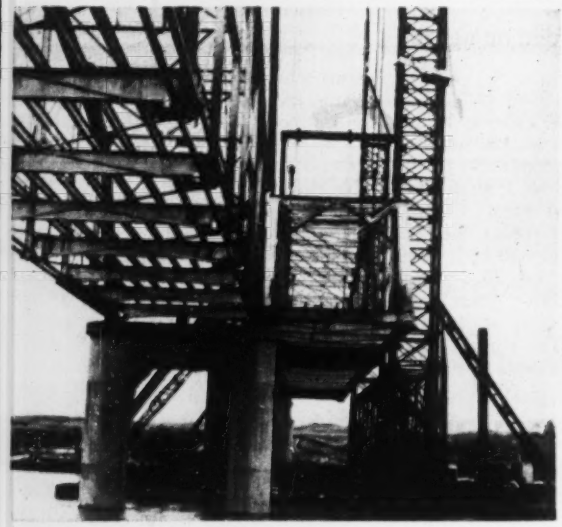
The City's Board of Estimate has approved the contract, and it should be awarded at any time. Work will begin shortly after the award has been made.

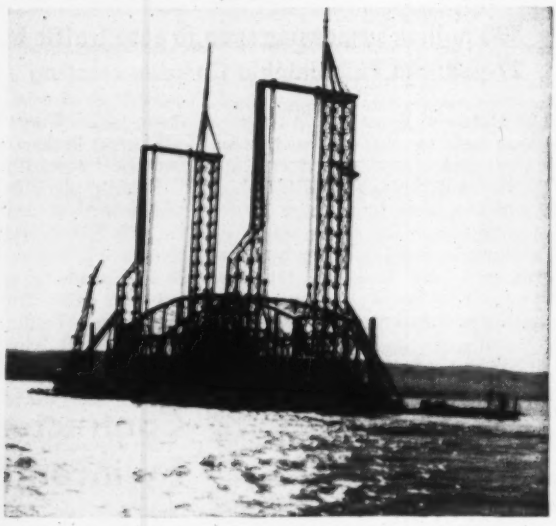
Other bidders on the work included combines of MacLean-Grove and Co. Morrison Knudsen Co., the Arthur A. Johnson Corp. and Peter Kiewit Sons Co. at $13,987,500; Poirier and McLane and Tully and DiNapoli at $16,229,740.

This modified contract is unusual but not unprecedented. J. A. Healy had a similar agreement with New York City's Board of Water Supply on tunnel work done just after World War II.

Column Research Council committee headed by Jones

The Column Research Council of the Engineering Foundation has appointed a new Committee on Practical Applications, headed by Jonathan Jones, former chief engineer of the fabrication and construction division of Bethlehem Steel Co. Jones told the council at its annual meeting in New York City that he believes the council's projects are going to result in many specific recommendations for practical design rules. Shortridge Hardesty of Hardesty & Hanover, New York City, continues as chairman of the council and Lynn S. Beedle of Fritz Laboratory, Lehigh University, as secretary.





Tall towers on barges pick up bridge for ride up river

The Missouri River bridge at Wheeler, S. D., faced with inundation by water backing up behind the Army Engineers' Fort Randall Dam, is being moved a span at a time to a new location at Chamberlain, S. D.

Six spans, each 256 ft long and weighing 175 tons, are being towed 100 miles upstream by barge. Moving the spans in toto was the alternative to disassembling, match marking, transporting and reassembling the bridge—an operation that would have required removal of 85,000 rivets alone.

The move is being accomplished with equipment fabricated especially for the job by the Beasley Construction Co., of Muskogee, Okla., working under a subcontract from Foster-Smeltana Co. of Omaha.

Equipment consists of four 200-ft high towers mounted on two barges. One tower, fixed at the base, is surmounted by a derrick. The other tower can be removed by the derrick so that its barge can be positioned under the bridge, after which the tower can be re-erected so that the two towers straddle the span. Lifting tackle is rigged to a beam across the top. The span, lifted off the piers, is lowered 35 ft to the barge.

With three 150-hp sea mules providing motive power, the unit is taken upstream at a 2-mph rate. At Chamberlain, a lift of 54 ft is required to place the span atop the new piers. Complete cycle for relocating one span is eight days.

The same procedure will be used in transferring an existing highway bridge at Chamberlain to the new piers. This bridge has two 336-ft long spans. The move there will be over a distance of about two blocks.

In combining the two bridges, the spans will be set in pairs on the piers to provide two one-way crossings.

Highways 18 and 281, which formerly crossed at Wheeler, now are being routed over the Fort Randall Dam.

At Chamberlain, construction of a detour for the Chamberlain bridge already has begun. A dike is being pushed out from the west bank. Two Bailey bridges will close the gap between the dike and the east shore.

Total cost of the superstructure contract is $2.1 million. It is a joint project of the Army Engineers and the South Dakota Highway Department.

Revised federal contract forms fail to solve disputes-clause question

Contractors still can't get court review except on basis of fraud; relief at present apparently lies in pending laws

The disputes clause in federal construction contracts moved back into the limelight this week. New contract forms scheduled to take effect next week won't limit the authority of department heads to make final and binding decisions in disputes with contractors.

Under the new form, lawyers say, a contractor would still have to allege and prove fraud before he could get a court to review a department head's decision. If contractors are to have the right of court review, Congress will have to enact clarifying legislation. That is what the Supreme Court suggested when it handed down the famous Wunderlich decision in November 1951.

• **Defense Department objects**—Legislation is hanging fire in Congress right now. The Senate Judiciary Committee in February reported a new McCarran bill like the one that passed the same body in the closing days of the last session. The bill has come up twice on the Senate calendar for a vote. Each time, the Armed Services Chairman objected in behalf of the Defense Department, and the bill went back to the foot of the calendar.

Meanwhile, the House has waited for Senate action, just as it did last year. Companion bills in the House have been referred to its Judiciary Committee. The committee has been holding them until the Senate passes its measure. If the delay in the Senate lasts too long, the House Judiciary Committee may report a bill of its own in an effort to obtain results on the House side of the Congress this year.

The pending bills specify that no provision of a government contract shall limit judicial review of decisions (in contract disputes) to cases where fraud is alleged. Government departments generally go along with that language. But the Defense Department objects to a succeeding clause that gives the General Accounting Office, as well as the courts, the right to review decisions of government departments. GAO is an agent of Congress; other people in addition to the Defense Department are leery of giving the Comptroller General and his GAO staff authority to review decisions of department heads in contract disputes.

• **AGC lodges protest**—New contract forms that become effective June 19 were worked out by the General Services Administration in cooperation with other government departments that handle civilian and military construction. GSA put out the new forms March 19 under General Regulation No. 13.

Late in May the Associated General Contractors protested what is termed the unfairness of the provisions attached to the new standard government construction contract Form 23, with emphasis on the disputes clause. The protest was made in a letter to Edmund F. Mansure, the Eisenhower appointee who became GSA Administrator May 4. A copy of the letter went to the Secretary of Defense.

GSA lawyers last week were preparing a reply for Mansure's consideration when he returned Monday to Washington. The legal counselors could see no reason for postponing the effective date of the new regulation to take corrective measures, as suggested by the AGC.

• **New words but same effect**—Wording of the disputes clause is amplified in the new contract document. But lawyers for the contractors say the effect is the same: Conditions tantamount to fraud would still have to be alleged before a court could accept an appeal to review a department head's decision.

As written in the new provisions, the disputes clause says that a decision by a department head or his duly authorized representatives shall be final and conclusive, unless determined by a court to have been "fraudulent, arbitrary, capricious, or so grossly erroneous as necessarily to imply bad faith." Lawyers point out that bad faith is as ugly a thing to allege and prove as fraud. On the basis of Supreme Court decisions, they declare that no court could accept a case that did not involve what amounts to fraud.

The old disputes clause contains no exceptions. It states flatly that the decision of the department head or his authorized representative shall be final and conclusive.

The exceptions were added to the new provisions as a partial concession to suggestions made by a subcommittee of the Construction Industry Advisory Council. This subcommittee conferred on new contract regulations with the old Federal Works Agency for two years, until the end of 1951, when government reorganization did away with FWA and transferred a good part of its functions to GSA. The advisory subcommittee was abolished at that time.

As noted by H. E. Foreman, managing director of AGC, in the May 26 letter to Mansure, the new contract provisions show few changes resulting from subcommittee suggestions. Foreman said that the new contract contains a number of unfair provisions; he put emphasis on the disputes clause as the outstanding example of what he meant.

It seemed obvious at the beginning of the week that the new regulation and contract forms would take effect without change on June 19, as scheduled. If that proves true, contractors will have to wait for Congress to pass the McCarran bill or similar legislation before they can hope to obtain court review of decisions by department heads in contract disputes.

Florida toll highway to cover 110-mi stretch

Florida's legislature has decided on following a cautious approach to the state's first venture into the business of constructing and operating a toll road—the proposed 313-mi Miami-Jacksonville highway.

Instead of committing itself to the entire project, the legislature voted to limit construction in the next two years to the 110-mile Miami to Stuart route. This work is estimated to cost about $55 million.

The legislature, however, went on record as approving the full project. Three factors were noted as being responsible for limiting the program at the outset:

• Legislators, skeptical as to whether the 313-mi toll road would be a paying proposition, wanted a full basis for making further financial commitments.

• Other opponents of the full project contended that the greatest need for traffic relief along Florida's east coast is in the stretch between Miami and Stuart.

• There was strong opposition to the measure from communities along U. S. Highway 1, where it was feared loss of business would create "ghost towns."

The toll road measure provided for creation of a five-member toll road authority, two members are to be selected from the State Road Department and three are to be appointed by the governor, subject to State Senate confirmation.

Connecticut to take tolls on paid-up projects as aid to big road program

To help pay for construction of new Connecticut highway projects, tolls will continue to be collected after payment of bonds on Merritt Parkway, Wilbur Cross Parkway and the Charter Oak Bridge at Hartford.

This was authorized by the Connecticut legislature in a session that launched the state's most ambitious highway development program—a 10-year, $400-million network of expressways to be toll-financed for the most part (ENR April 9, p. 25).

Action on the program at this session was limited to authorizing the bond-financing of the 130-mi cross-state toll highway from the New York State line to the Rhode Island border estimated to cost $225 million (ENR May 28, p. 27). Future sessions will determine the financial arrangements for other elements of the long-term program.

The past session authorized $6.9 million for a new bridge across the Connecticut River between Windsor Locks and Enfield.

The state highway department was voted a two-year budget of $81 million. Maximum truck weight limit was increased from 25 to 30 tons. Preliminary approval was given to a proposed constitutional amendment prohibiting diversion of highway funds. Municipalities were granted power to create parking authorities.

Legislators voted $15.6 million for construction of new buildings at state institutions.

Connecticut revises architect registration

The Connecticut legislature voted several revisions in the state's architect registration law.

Before examinations can be taken, candidates must have a high school education and eight years practical experience, or five years college with three years employment in an architect's office.

The revised law requires that a registered architect be retained for design of all buildings over 5,000 sq ft, except for farm buildings, one and two-story houses, and structures built by public utilities maintaining their own registered engineers.

Milestone reached on Cachuma project

Cachuma Dam construction has been completed on the Santa Ynez River near Santa Barbara, Calif. Flood waters stored here will be delivered under the Santa Ynez Mountains via the six-mile Tecolote Tunnel to Santa Barbara and the rich but dry south coastal plain. The dam, constructed of earth and rock, rises 206 ft above the river bed and will form a reservoir of 210,000 acre-ft capacity. The $36-million water development is a Bureau of Reclamation project, which upon completion will be operated by the Santa Barbara County Water Agency. Work is yet to be completed on the Tecolote Tunnel, four small regulating reservoirs and a 26-mi conduit. Mitty Constructors, Inc., held the $6.7-million dam contract. Halvorson contractors of Portland, Ore. and Spokane, Wash., have $4.7-million Tecolote Tunnel work.

Giant motors placed for wind tunnel

This week the installation of the most powerful electric motors ever built marked the first big step in assembling the world's largest rotating machine at the Arnold Engineering Development Center.

The $170-million Air Force project, which is being constructed under the supervision of Army Engineers, is located near Tullahoma, Tenn. (ENR April 30, p.30).

The four motors, two rated at 83,000 hp and two at 25,000 hp, were installed in the motor drive building of the propulsion wind tunnel. Each of the large motors is 21½ ft high and weigh 225 tons.

A large bridge crane, which is in itself a major unit in the propulsion wind tunnel's construction, lifted the motors 70 ft and lowered them through the roof of the building to their mountings.

Still under construction at the Westinghouse Electric Co. plant at Sunnyvale, Calif., are the five compressors which these motors will eventually drive.

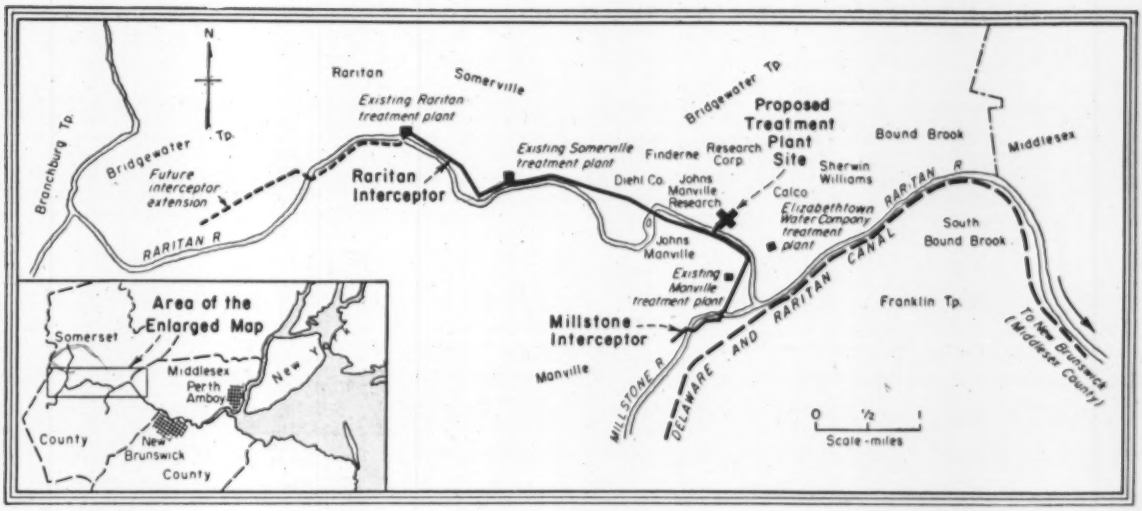
When put together, the entire machine will measure about 500 ft in length.

Previous to the installation of these AEDC motors, those built for the Grand Coulee Dam pumping station held the record with a hp rating of 65,000.

Bureau of Public Roads divisions are combined

Clifford Shoemaker retired June 1 as division engineer of the Bureau of Public Roads at Kansas City, Mo. On the same date, the north and south portions of Division 5 were consolidated, with Kansas City as headquarters, and W. V. Buck was placed in charge of the new division. Buck had previously been division engineer in charge of Division 5 North, St. Paul, Minn.

The new consolidated division will include seven states, instead of eight. Wisconsin, which has been part of the north unit, is being transferred June 15 to Division 4, with headquarters in Chicago.



Upper Raritan sewerage plan outlined

Consultants' recommendations to Somerset County group contain proposal for 28-mgd complete treatment works

The engineers' report on which a committee of Somerset County citizens base their claim for a separate trunk sewer project on the upper end of New Jersey's polluted Raritan River (ENR May 28, p. 26) has been released. It recommends a $7.75-million project.

Consultants Sheppard T. Powell and Whitman, Requardt and Associates, both Baltimore firms, have finished in about eight months the task of drawing an intra-county plan, restricted to removal of municipal and industrial wastes from a limited length of the Raritan, plus a water supply to compensate for diversions.

The plan (see map) is to intercept all sewage and industrial wastes, give them complete treatment at a plant near Manville, and increase low flows in the river with purchased water from the Delaware and Raritan Canal—as long as this supply is available—then from a proposed upper basin storage reservoir, when and if necessary.

Cost of storage is figured in the $7.75-million price tag on the whole 28-mgd collection and treatment plan. But it is pointed out, Elizabethtown Water Company should share in the $900,000 construction cost of such storage, since its supply would benefit. (This company may now take legally 20 mgd from the Raritan and 15 mgd from the Delaware and Raritan Canal.)

It is recommended by the consultants that an authority be formed for financing and building the proposed trunk sewer project. A single 40-year bond issue for the entire project is recommended as a step to be taken as soon as possible after formation of such an authority.

(New Jersey's Governor Driscoll signed a bill last week that clears the way for a Somerset County sewerage authority, and the boroughs of Somerville and Raritan have already taken action toward its creation.)

• **The project**—Interceptors proposed would carry all flow by gravity to a low-lift station at the treatment works.

At the treatment works, sanitary wastes would get primary settling, biological filtration and final clarification; sludge would be digested dewatered and disposed of to farmers.

Industrial waste (other than organic) from Johns-Manville Corp. is figured to need only plain sedimentation, its sludge to be vacuum filtered and used as fill. Special facilities at the proposed plant would give the J-M wastes flocculation and settling, the effluent to go to the river after chlorination.

Calco (Chemical Division of American Cyanamid) has a pilot plant under way to investigate pre-treatment methods and effects of biological treatment on its wastes. It is planned that separate secondary treatment facilities would be set up at the sewage works to receive Calco wastes directly after preliminary treatment by the industry. Exact design of these filters awaits findings of Calco pilot plant work.

Other industries' wastes can go directly into the trunk sewer and to the treatment works, except for Sherwin-Williams wastes which are planned to go to the treatment plant via existing Calco treatment ponds.

• **Plan called cheaper**—Nowhere in this report is the existence of a valley-wide plan for pollution abatement (ENR May 29, 1952, p. 58) referred to, or even hinted. The consultants were restricted in their assignment to working out a plan for a specified portion of Somerset County.

But their cost estimates for the intra-county project are the basis of comparison (See ENR May 28, p. 26) with the earlier valley-wide scheme, now limited to Middlesex County.

Suggested rates and estimated charges appear in the tables below.

Table I

Suggested Rate Schedule

First	3	mg/month	at	$120	per	mg
Next	12	"	"	"	100	"	"
Next	45	"	"	"	80	"	"
Next	60	"	"	"	70	"	"
Next	120	"	"	"	60	"	"
All over	240	"	"	"	47	"	"

Surcharge for excess BOD: All BOD in excess of annual average of 200 ppm to be paid for at $0.03 per pound.

Surcharge for excess suspended solids: All in excess of 200 ppm and requiring digestion to be paid for at $0.015 per pound; all in excess of 500 ppm but not requiring digestion to be paid for at $0.01 per pound.

Table II

Estimated Annual Charges

Bridgewater Township	$12,000
Borough of Raritan	23,292
Borough of Somerville	59,184
Borough of Manville	30,000
Calco	371,976
Johns-Manville	83,856
Total	$580,308

Strikes flare in the Far West

Utah, Nevada, California, and Colorado are scenes of building craftsmen strikes which tie up many projects

Most major construction projects in Utah were shut down or closing this week, after a June 2 walkout by building trades unions seeking wage boosts from the intermountain branch, Associated General Contractors.

No estimate on the value of work halted has been made available, but unofficial estimates put it in the neighborhood of $15 million. It is expected that between 12,000 and 14,000 men will be idled directly by the walkout if it continues a full week.

Contracts in force for three years expired June 1, with no new ones written despite efforts to negotiate over a two-month period.

Contracts that expired simultaneously were those of carpenters, laborers, cement finishers, ironworkers and teamsters affiliated with the AFL. Sheet metal workers and roofers quit work a day earlier, also after contract expirations.

Allen E. Mecham, counsel for AGC, denying lockout charges of union leaders, said there was no general shutdown but said job after job was being halted as they became "uneconomic" with the failure of some crafts to arrive for work.

"We are asking them to come back, not trying to lock them out," he said, pointing to a general 5-cent per hour wage increase offered by AGC.

Richard S. Roberts, secretary, Salt Lake Building Trades Council, said workers were seeking wage parity with other areas of the country. Mecham countered by saying granting of all union wage and fringe benefits would "increase construction labor costs at least 25%."

Contractors have notified Commissioner Earl J. Ruddy, U. S. Mediation and Conciliation Service, that negotiations will not be renewed on the part of the AGC as long as there is picketing.

Jobs at which pickets appeared included a two-story office structure for Mountain States Telephone & Telegraph Co., and the Gateway Tunnel of the Weber Basin Reclamation project.

A $2-million building job at the campus of Brigham Young University in Provo, and highway, school and commercial projects in southern Utah are among those "down," although some small home building is continuing.

The sheet metal workers' walkout tied up some 40 firms and a dozen roofing contractor operations in Utah, mainly in the Ogden and Salt Lake City areas. The sheet metal workers have asked a 22½-cent hourly boost, including 7½ cents for a union welfare fund.

Some carpenters are reported willing to work if firms will promise them retroactive wage increases should favorable contracts be signed. Meantime, there were growing indications a painters' union walkout was in the offing.

• **Nevada**—Some 100 building contractors in western Nevada last week turned down an AFL carpenters union proposal for a 17½-cent hourly wage boost and withdrew a compromise offer of 7½ cents.

The contractors, in a joint statement said, "Any increased labor costs would tend to make prohibitive the public's ability to obtain necessary housing and construction."

Lloyd Jones, president of the union's Local 971, said the carpenters were willing to resume negotiations with the Associated General Contractors at any time and added the union had been granted only one meeting with AGC since the carpenters made their wage proposal two months ago.

Rollers and sprays

A tentative agreement giving 14,000 AFL painters a raise of 25 cents an hour plus 7½ cents an hour for a health and welfare fund was reached last week in Chicago. Members of a joint board of union officials and contractors said the action averted a strike.

Ray N. Elvart, head of the contractors' negotiating committee, said the painters had agreed to the use of dip-T type rollers and the use of sprays for application of oil paint on rough concrete, cinder block and other types of masonry unsuitable for brush application.

These concessions he said, made possible the wage increase and benefits agreed to last week.

Meanwhile, construction of a U. S. Bureau of Mines building at the University of Nevada and an Anaconda Copper project at Yerington were stalled by the carpenters' walkout.

Elsewhere on the labor scene, the Painting and Decorating Contractors Assn. and the painters' union reportedly have agreed to extend the present contract for one year. The contract calls for $2.62 per hour for journeymen painters.

Several other unions are having difficulty achieving their wage demands but they will not leave their jobs.

Plumbers Local No. 350 has asked the Federal Mediation and Conciliation Service to intervene in its dispute with employers. The plumbers are requesting a new rate of $3.25 per hour, $42 a week for subsistence on out-of-town jobs and 7½ cents an hour for the union welfare fund retroactive to May 29.

The brick hodcarriers Local 169 seeking a raise from the present $2.10 an hour to $2.50 has scheduled a special session for next Monday to discuss progress of the negotiations.

• **Northern California**—AFL laborers in northern California last week struck construction jobs including four major projects. At week's end an estimated 25,000 to 30,000 men had walked out, on jobs including the Bayshore Freeway extension, the San Francisco Airport terminal, a San Bruno high school and a Redwood City hospital.

The union introduced an interim opening of negotiations—the contract does not expire until 1956—asking for a 20-cent-across-the-board hourly wage hike that would boost the basic wage to $2.05 per hour, matching Laborers' wages in the Los Angeles area.

Contractors proposed a 10-cent hike, following the pattern set by recent AGC contracts with the teamsters and carpenters. Robert Mitch, director of labor relations for AGC, said contractors contend the 10-cent raise would boost the present $1.85-wage to the $2.05-level, considering that northern California contractors pay 7½ cents an hour for health and welfare benefits and 2½ cents an hour for administrative costs which contractors in southern California do not carry.

Picket lines were not established, and other crafts remained at work. However, the union threatened to spread the strike and announced on June 6 that it would seek separate agreements with individual contractors.

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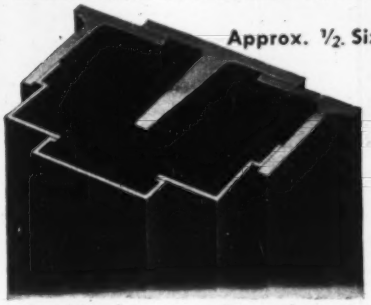

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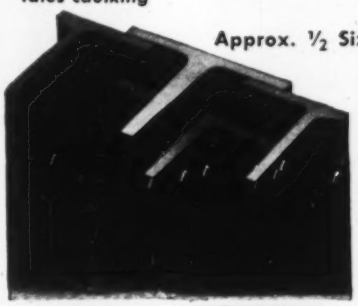

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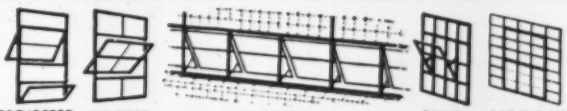

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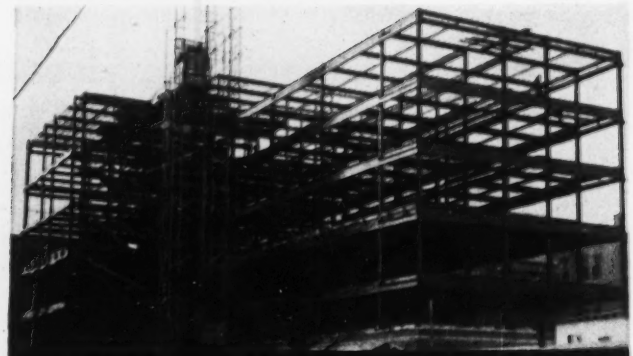

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State legislatures

Labor laws show no trend as enacted by the states

No new general trend favoring either labor or management is emerging from state legislative sessions, where labor-relations measures are receiving little affirmative action.

State lawmakers, as a whole, are continuing to act coolly toward proposals likely to antagonize either labor or management and show no widespread inclination to move deeper into this field of legislation—even if T-H is revised to permit them to do so.

The reluctance to act on controversial labor relations legislation has dominated most state legislatures since 1947, when many states enacted anti-closed shop and other types of restrictive laws (ENR May 14, p. 31).

Here is a roundup of the state laws and pending bills:

- Bills proposing to outlaw the closed shop and other forms of compulsory unionism have been rejected already this year in California, Colorado, Idaho, Kansas, Oregon, Utah, and Wyoming. Such measures are pending in Alabama, Connecticut, Ohio and Oklahoma.
- Proposals for the repeal or modification of existing state laws banning the closed shop and other forms of compulsory unionism were killed in the legislatures of Arkansas, Iowa, Nevada, North Carolina and Tennessee. Other states in which such statutes remain in effect include Arizona, Florida, Georgia, Nebraska, North Dakota, Texas and Virginia.
- Bills imposing new restrictions on picketing were enacted in Arkansas and Oregon, and are pending in California.
- Legislation to curb the use of injunctions in labor disputes is pending in Michigan; killed in West Virginia.
- Proposed restrictions on the use of union funds for political purposes were killed in New York, and are pending in California.
- Legislation to provide new state services for conciliation, mediation and arbitration of labor-management disputes was enacted in North Dakota; is pending in Delaware, Massachusetts, and Oklahoma; and was killed in Tennessee.
- Proposals for new state labor relations agencies, to guarantee and regulate collective bargaining in cases not covered by federal law, were rejected in California, Indiana, and West Virginia, with such a bill pending in Delaware.

Unfair practice charged

Charges of unfair labor practices, charged by the National Labor Relations Board against the AFL Pittsburgh Building and Construction Trades Council and three unions will be heard soon in a federal court to be convened in Pittsburgh.

The charges involve work done on an expansion project of the South Pittsburgh Water Co. and were filed on the complaint of the Perry Electric Co., which is one of the contractors on the job.

The NLRB and the company asked a federal judge to grant an order which would enjoin the defendants from interfering with Perry's work.

The NLRB charge said that the council and the electricians, the plumbers, and the ironworkers have attempted to encourage employees of other contractors not to handle materials of the Perry firm.

The employees of Perry Electric are members of District 50 of the United Mine Workers.

Two-city upstate strikes may spread to two others

Strikes by building trades unions have slowed or stopped millions of dollars worth of construction work in the Albany-Schenectady area of upstate New York, and there were indications last week that the work stoppages may spread to at least two other upstate cities.

AFL bricklayers, laborers and ready-mix drivers left their jobs in Albany recently, and last week the strike spread to Schenectady, where carpenters and lathers joined bricklayers and laborers in a walkout.

The strikes are in support of wage increase demands that have been refused by the Albany and Schenectady Builders Exchange on the ground that percentage-wise pay boosts have exceeded the rise in the cost-of-living since the outbreak of hostilities in Korea.

The unrest may spread to Troy, where workers have remained on their jobs while negotiating for the same increases, and possibly to Rochester, where wage negotiations are also in progress.

• **Demands**—Wage demands in the area are: Bricklayers, 20 cents to $3.15; laborers, 15 cents to $2.05; ready-mix drivers, 15 cents to $2.15; ironworkers, 25 cents to $2.85, plus 7½ cents for a welfare fund; carpenters, 15 cents to $2.72, plus any welfare fund extras granted to other unions, and lathers, 15 cents to $2.95.

Settlements have been reached already in most of the smaller upstate cities, with increases ranging from 10 to 20 cents an hour. New rates are set at about 15 cents below existing rates in larger cities.

Larger jobs slowed or shut down by the strikes include half-a-dozen school construction projects, a $1.75-million addition to the Hotel Van Curler in Schenectady, and a million-dollar General Electric hospital in that city, a New York Telephone Co. building in Menands, and a state office building for the Division of Unemployment Insurance in Menands.

New indictments made against two labor leaders

Carl J. Bianchi and L. A. Thompson, business agents of two St. Louis construction trade unions, have been indicted again on charges of violating the anti-racketeering law by extorting, or attempting to extort, money from contractors engaged in projects which come under the classification of interstate commerce.

These were two new indictments brought by a U. S. grand jury sitting in St. Louis.

Four earlier indictments had named Bianchi, Thompson and 10 other AFL construction union officials (ENR June 4, p. 28).

Bianchi, an official of Local 513, hoisting engineers; and Thompson, of Local 574, teamsters and chauffeurs, were charged in one indictment with extorting or attempting to extort $6,500 from the Mid-American Engineering Corp. in 1950. The company was resurfacing a section of U.S. Highway 61 in Missouri when the action took place.

The indictment said the two men "conspired to obstruct and delay interstate commerce by extortion of property from the Mid-American Corp. with its consent, induced by wrongful use of actual and threatened force, violence, and fear, and under color of official right."

In the second indictment, the jury charged that Bianchi, in 1951, "obstructed interstate commerce by extortion of $1,000 from the Strebler & Landvatter Corp. with its consent, induced by wrongful use of actual and threatened force, violence and fear, and under color of official right."

The Strebler & Landvatter firm was at the time reconstructing part of an interstate crude oil pipeline in Missouri at the time of the alleged illegal activities.

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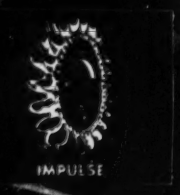

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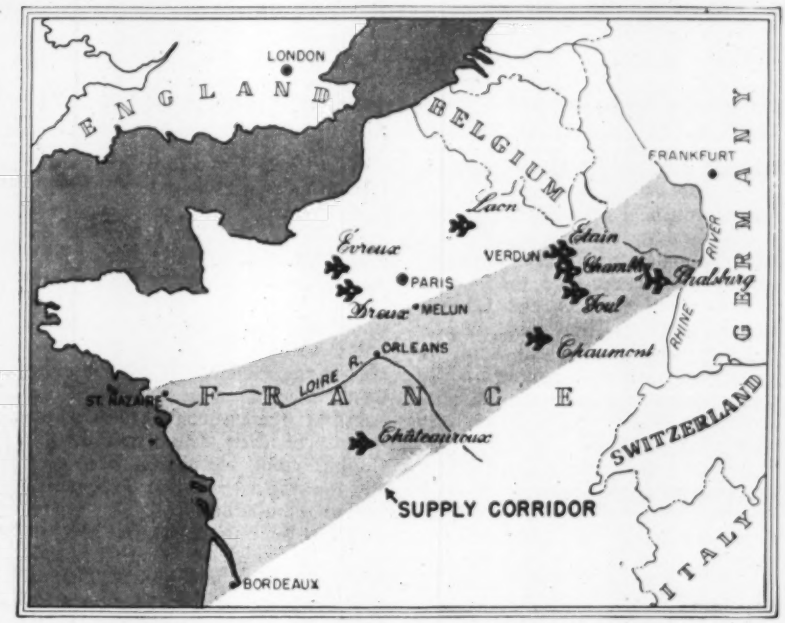


NINE AIRFIELDS AND DOZENS OF DEPOTS AND TROOP FACILITIES IN A BROAD SUPPLY CORRIDOR ACROSS THE COUNTRY COMPRISE THE HALF BILLION-DOLLAR JOB OF . . .

JCA—New command post for military construction in France

Waldo G. Bowman
Editor, Engineering News-Record

Last January 15 the news came out of Washington that the separate construction programs of our armed services in Western Europe henceforth would be unified into a single program under a new setup to be known as the Joint Construction Agency or JCA.

This altogether new and hopeful sign of service unity and construction administration logic received just acclaim, which was added to when it was announced that Brig. Gen. Orville E. Walsh—who had been sent to Morocco to get the airbase work there back on the track after the congressional investigation last year—had been moved to Europe to initiate the project, and would be followed soon by Maj. Gen. George J. Nold who would head it.

There then ensued official silence. For all that everybody outside (and most everyone inside) the Defense Department knew, a brilliant idea and two top-notch engineer officers had been forgotten some place in the Pentagon—a not unprecedented type of disappearance.

• **Death report exaggerated**—It is now possible to report from Paris that any rumors that JCA had been stillborn were grossly exaggerated. The agency has had its troubles learning to walk, but as of about May 10, it severed parental strings to the Pentagon, and assumed its destined role as a definite part in the organization of the European Command.

General Nold, when leaving Washington at about that time—after one of the many conferences that he has had to fly back to attend—said goodbye with the statement, "I'll see you in 1955." Whether he can live up to such a resolution or not, the fact that he made it suggests that JCA is about ready to function.

Actually, JCA has been functioning within about the timetable that was laid down. One can only say "about" because right at the start, in February, it ran into the freeze that the Defense Department had placed on all personnel shifts and new project starts. Not many things could be done until the review had been completed of all going projects that were less than 20% complete and on all unstarted projects funded with '51, '52 and '53 appropriations.

Release from this order came in late April. Since then, personnel have been assembled in earnest, a headquarters in the Billancourt section on the west side of Paris obtained and the various construction elements—which were scattered in four different hotels in Paris and 75 miles south in the city of Orleans—began to be assembled under one roof.

• **What JCA is**—As its name implies, JCA will administer any and all construction that any of the three armed services—Army, Navy or Air Force—is asked to do for the European Command (EUCOM). Its establishment announcement said it had "responsibility for management and supervision of all construction programs in Western Europe," but its scope of operations at the present time apparently is limited to France.

General Nold, as the administrator of JCA, has two deputies: General Walsh, an Army Engineer officer, and Col. A. E. Stoltz, an Air Force officer. In addition, his top staff includes a senior officer—labeled a "special representative"—from each of the three services who provides the liaison with his particular group under EUCOM—in effect being the "owners' representatives." General Nold reports directly to the Commanding General, EUCOM, who reports to General Gruenther, commander of SHAPE (Supreme Headquarters Allied Powers in Europe).

The remainder of the military staffing of JCA is drawn from the three services in accordance with their ability to supply qualified officers and without any attempt to give each equal representation. It is planned that when the JCA organization is complete it will total about 1,000—this will include officers, enlisted men and civilians.

Organizationwise, JCA has a close resemblance to the division and district setup that the Corps of Engineers uses in the U.S., although it should be emphasized that it has no connection with the Office of the Chief of Engineers in Washington, but is an integral part of the European Command.

The top echelon, located in Paris, is the division, and there are three districts—Northeast at Verdun, North at Paris, and Port of Bordeaux.

A rough idea of the setup is given in the accompanying simplified organization chart, which shows that the headquarters functions through three layers of staff.

The district offices are also organized with three staffs—(1) advisory, which includes management safety and liaison branches and special assistants and consultants; (2) administrative, which includes service, procurement-and-contract, legal, property and fiscal branches; and (3) technical, which includes an engineering division with planning-and-control, design, and foundation-and-materials branches; and an operations division with reports, esti-

JCA–New command post . . .

It is organized to unify, supervise and spur the military construction program

mates, and construction branches. Below the districts there are the usual area offices for this type organization.

• **What JCA replaced**–When, on April 15, JCA assumed responsibility for all U.S. military construction in France, it took over nine airbases, being handled by U.S. Air Forces, Europe, and a program of depot, hospital and troop housing projects in a supply corridor extending across the middle of France from the Atlantic ports of Bordeaux and St. Nazaire to the Rhine, being handled by the Communications Zone organization of the Army. In the latter was included a dredging job at St. Nazaire preliminary to building a pier and petroleum terminal to feed a pipeline planned to cross France to Germany, with necessary storage and tank farms at Melun south of Paris and Verdun in the east.

The Army's Communications Zone setup had been administered from a central headquarters at Orleans and from three district offices. This actually became the nucleus of JCA's present organization, except that the Orleans office was transferred to Paris. The district offices remain at the locations mentioned above.

The Air Force construction had been handled from its headquarters office in Wiesbaden, near Frankfurt, Germany, with field responsibility delegated to a senior officer in Paris. This officer is now the special representative of Air Force in JCA top echelon.

But the Air Force, in place of the district organization that the Army used, had placed an Air Force installation officer at each base under construction, and had supplemented this setup in September, 1952, by contracting with a combination of three large U.S. contractors to supervise the whole operation. These contractors–Raymond Concrete Pile Co., Walsh Construction Co. and Brown & Root–entered into the contract under the name of Construction Management & Engineering Associates (CMEA), which accurately defined their duties.

This Air Force setup, unlike the Army districts, did not fit without change into the JCA scheme. Nevertheless, the fine managerial and construction skills that CMEA offered–the contractors had not skimped in sending over their best men–were most desirable to retain. Accordingly CMEA has been integrated into the JCA organization and now serves as its operating staff–at headquarters, at district level and on separate projects.

Compared with its former function, CMEA will be devoid of planning and management duties, and will concentrate on field inspection, materials control and testing and construction advice, including reports and estimates. It is understood that a new contract between JCA and CMEA, to give effect to this change, is now being negotiated. The Air Force installation officers at the bases have in most instances been retained, with their title changed to area engineer within the JCA setup.

JCA also took over supervision of the work of a number of U.S. architect-engineer firms, which have allied themselves with French partners, to carry on the actual inspection of the work being done at the various installations.

Both the Air Force and the Army had contracted with such firms, each of which is working on two to four sites. In addition to this work, which goes under the designation of Title II, these firms originally had been hired to do design (Title I) in the sense of fitting specially designed U.S. structures to the various sites.

However, most of this work did not materialize–or was done and then abandoned–since on the airbases the French contractors were allowed to submit alternate designs, and only one chose to bid on the U.S. suggestions. These consultants, it is understood, will continue their Title II inspection duties under JCA, reporting through the operating staff (formerly CMEA) and the area engineers to the district headquarters.

From all the information that can be obtained on the subject, it seems that the originally intended use of such architect-engineer firms has not been too successful–from their point of view at least. On the Air Force work the permission given French contractors to submit bids on alternates left the A-E's without any design function; also when CMEA entered the picture the A-E's Title II inspection had to be integrated into the CMEA setup. While the Army did not permit the alternative designs, it was frequently not able to offer big enough single design jobs to give the A-E's a profitable volume of continuous work.

• **Plan on alternates**–To avoid the use of alternates and the long delays occasioned by the necessity of evaluating them before a contract is let, there is a plan at present under study to develop some standard designs of buildings that suit French construction methods and utilize French materials to a maximum extent.

Not much, it is predicted, will come of this, because (1) most of the important buildings have already been committed to a variety of designs proposed by French contractors; (2) too much time would be required to work out something that would be acceptable to the French; and (3) the effort would meet head-on the desire and habit of French contractors to use designs of their own. Indeed, this third situation has already been met, and the original standard U.S. design lost to the alternates.

About the only practicable solution would be to standardize on simple concrete frames and concrete block walls, a precedent for which already exists, since one or two of the French contractors chose this design as their alternate to the original U.S. standard building of precast concrete panel construction.

Actually, the alternate French designs being used are unusually interesting, even if their adoption has led to some headaches. For example, one French alternate consists of precast gypsum wall panels, which also provide the forms for the field-poured concrete columns. Another utilizes sandwich panels–consisting of a honeycomb structure of paper between plaster boards and faced on the outside with aluminum–which are installed in a pressed steel frame. A third design uses poured-in-place walls made of porous lightweight concrete that contains no sand or fine aggregate, (nicknamed "popcorn" concrete); while a fourth uses precast panels made of even lighter concrete in which minute air voids are created by the use of a soap emulsion in the mix.

These various designs, including the originally prepared U.S. design which is being used at one base, will be described in greater detail in a future article. They are cited here to emphasize the kind of job–evaluation, inspection and construction coordination and control–that JCA inherited.

• **What JCA faces**–With all of its new organization and revised planning to give unified direction to our military construction operations in France, JCA is still faced with the task of coordinating with the French government in accordance with the agreement by which we are permitted to establish bases on French soil.

In so far as the airbases are concerned, most of the facilities up to

ground level—utilities and paving—are being built by the French in accordance with directives and specifications laid down by the North Atlantic Treaty Organization, whose military arm is SHAPE. Only through our membership in NATO do we have any say in this work, although the French authorities sometimes seek and take our technical advice. Above ground—for the majority of buildings on these bases and for all construction on the Army installations—JCA has the basic responsibility, although it must be exercised through French governmental and military departments.

The procedure works this way:

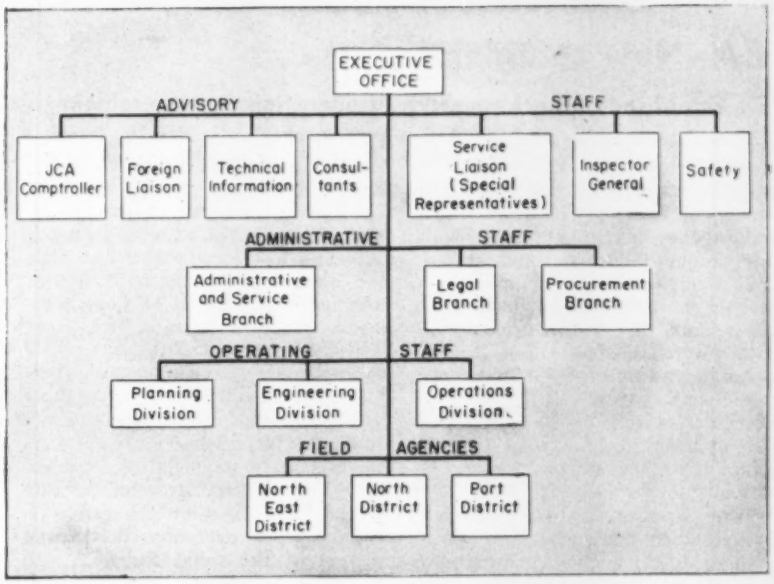
The two principal U.S. commands in Europe—Army and Air Force—set forth plans for future projects for U.S. budgetary decision. Once these are approved, JCA develops the designs, either in its own organization or through consultants, and submits them to a designated French government monitor. This authority—M. Francois Leduc, whose title is Chief de la Mission Centrale de Liaison pour l'Assistance aux Armees Alliees—decides which French agency will deal with a particular type of construction.

This may be the Services de Ponts et Chaussees (the national roads department); Le Genie (the French military engineers); Electricite de France (the national power authority); or some other.

Each of these French agencies has a field organization with which our successive echelons must deal. These agencies actually let the contracts to French contractors, although it is a requirement that the bids be opened in the presence of a JCA representative, usually the district engineer. Also the French agencies must have the approval of JCA in writing before they can authorize the successful bidder to go ahead with construction. The French agency makes partial payments to the French contractors as the work proceeds, and is then reimbursed by U. S. funds through the operation of a French-American Finance Liaison Office (FAFLO).

All of these procedures have been in effect under the previous Air Force and Army Communications Zone setups, with the result that they work more smoothly now than when the French and American personnel were strange to one another, when neither understood the other's work methods or governmental red tape, and when, indeed, neither country had the necessary type of organization to cope with the job there was to do.

The tense, chaotic situation of those early days has been replaced by one in which, for the most part, cordial relations of mutual respect and goodwill exist. If JCA can foster and develop further this international esprit de corps, its objective of speeding up the contracting and construction processes on our bases in France may well be attained in spite of the complicated procedures of international agreements.



HOW JCA IS SET UP to administer U. S. Air Force, Army and Navy construction in France. The organization follows the pattern used by the Corps of Engineers in the U. S., but its lines of authority come from the European Command and not from Washington. The operations staffs at headquarters, district and area levels are manned by construction experts of top-notch U. S. contractors.

AMERICAN CONSTRUCTION EXPERTS IN THE JCA SETUP

Headquarters chiefs:

J. J. Collins, Raymond Concrete Pile Co.
Ross White, Brown & Root
C. B. Kiesel, Walsh Construction Co.
C. H. Young, Walsh Construction Co.
Harrison Roberts, Walsh Construction Co.

Architect-Engineers:

Walker & Poor; Parsons, Brinckerhoff, Hall & Macdonald — George J. Murphy, resident head

Frank Grad & Sons; Seelye, Stevenson, Value & Knecht — Stanley C. Brogren, resident head

Dumont, Gotteland, Greer & Associates
Daniel, Mann, Johnson, Mendenhall & Maunory
F.A.C.T.S.—Fluor
Richard Hawley Cutting
MacKenzie, Bogart & White
Atlantic Engineers (Guy B. Panero and Amman & Whitney)

• **Still many problems**—But JCA will still be faced with a multitude of problems that only fast day-to-day footwork can solve—or attempt to avoid in part. A few of the problems that have plagued the program in the past suggest the nature of the difficulties that JCA must contend with and overcome if possible.

One of these is the tendency of our own top military command to change its mind on what it wants built, then to procrastinate on vital decisions because everybody from the base commander to the Pentagon has to initial—or embroider—a suggestion that twenty instead of ten shower baths be installed. Then in contrast to this slow-down process is a too frequent speed-up in ordering troops onto a base before facilities are ready.

On the French side, there will be the problem of overcoming the long delays in letting construction contracts after we have provided all of the necessary approvals.

Even though some improvement

JCA—New command post . . .

Established French methods of operation pose a problem

has occurred, this period still sometimes stretches to three or four months. A basic fault here is that the Services de Ponts et Chaussees—which is the agency most often charged with this responsibility—is understaffed. Even though its men are individually capable they are snowed under with paper work that assistants could do if they were available.

Another problem that has been solved only partially is to get the French to exercise continuous inspection of the contractors' operations to assure that they are meeting specifications.

Here there is not only a shortage of personnel, but such inspection is contrary to the French philosophy of construction. This philosophy holds that the contractor is ultimately responsible so that no inspection is necessary until the job is complete. Then if it is not up to standard the contractor must tear out the bad parts and do them over.

The bad concrete runways at the Toul airbase, which received so much publicity, were a result of this practice, and are now being covered with four inches of asphalt at French expense. Another instance of lack of inspection occurred at the Chaumont airbase where the contractor substituted slag for the specified limestone aggregate, without reducing the amount of tar specified for these blacktop runways. The result was a soft surface that had to be remedied by scarifying and adding more aggregate.

Such repair operations delay completion of the work, and JCA will have to push continuously on this inspection problem if its speedup objective is to be attained.

Another type of problem with which JCA is sure to have to contend stems from what might be called diplomatic or economic decisions that affect construction.

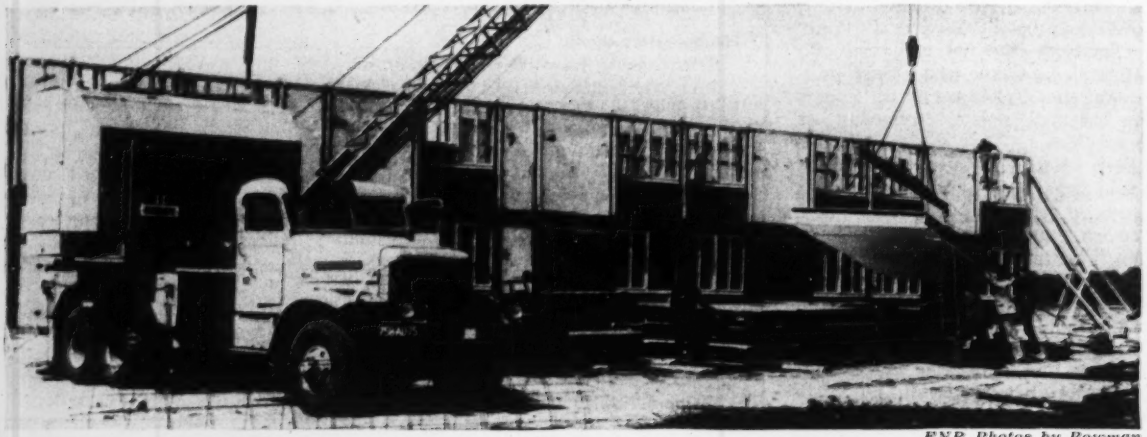
An example is one taken to order cast iron pipe from Scotland in accordance with the idea of spreading our purchases among various countries. Somewhere in the process it was decreed that the pipe, instead of being loaded at the plant in boxcars that would be shipped direct to the French bases, would be trucked to dockside, loaded on ship and taken to our Captieux depot near Bordeaux and then parceled out to the bases. By the time that the five or six rehandlings were completed, about 20% of the pipe was broken. Reorders to the Scotland mill are now being flown to the bases.

The sad aspect of this decision is that the biggest cast iron pipe foundry in Europe is in France, almost on the doorstep of most of our bases.

These problems are cited merely to

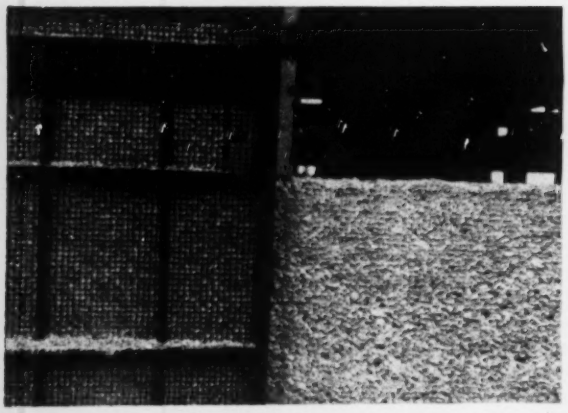
(*Continued on page 39*)

BARRACKS A LA FRANCAISE ADD INTEREST TO JCA's JOB:

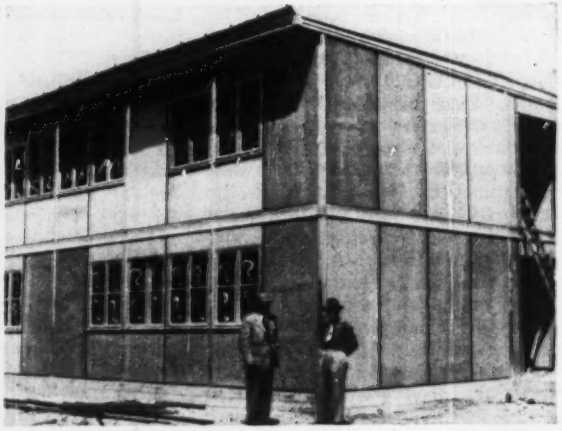


ENR Photos by Bowman

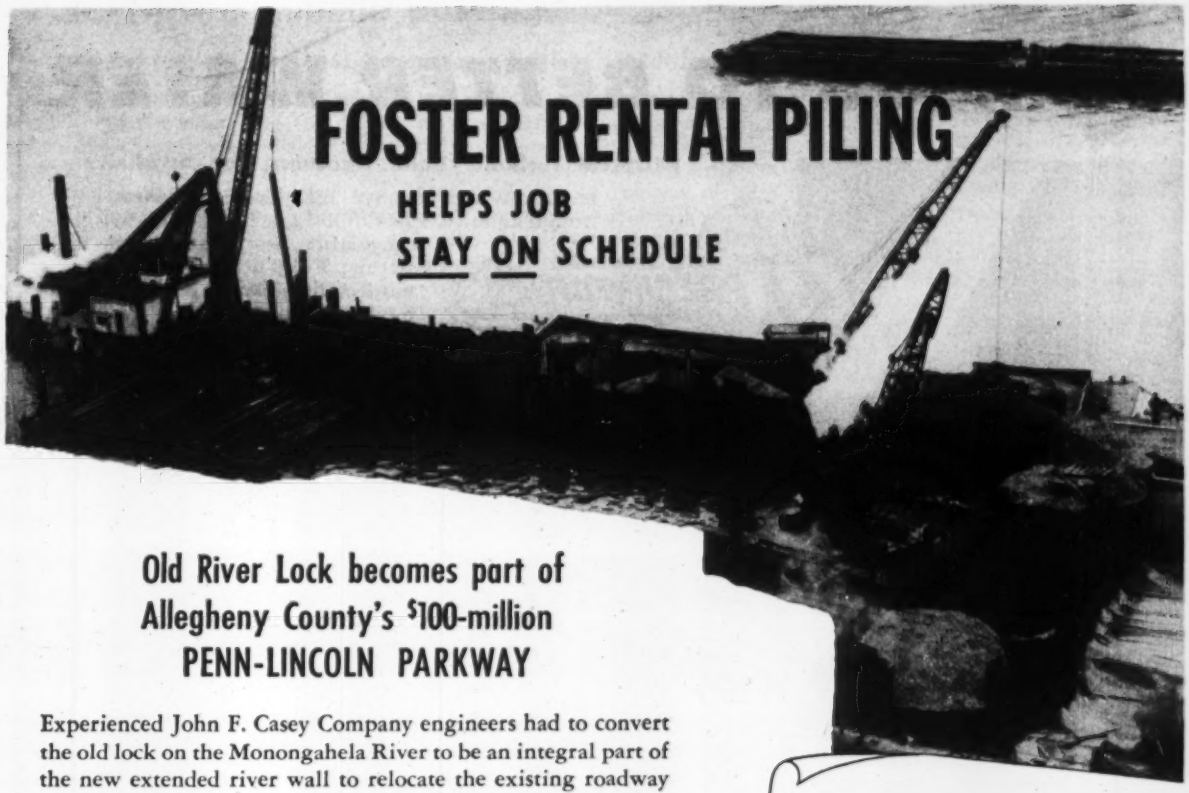
Precast gypsum panel walls at Toul



Walls of "popcorn" concrete at Chaumont



Aluminum-faced sandwich walls at Laon



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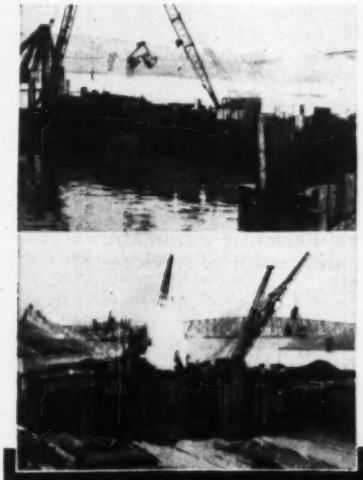

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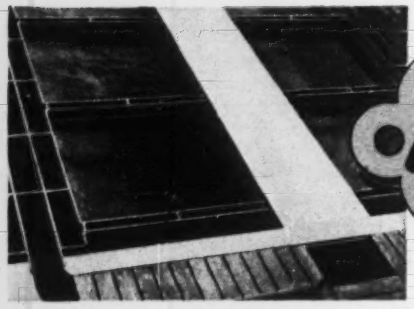

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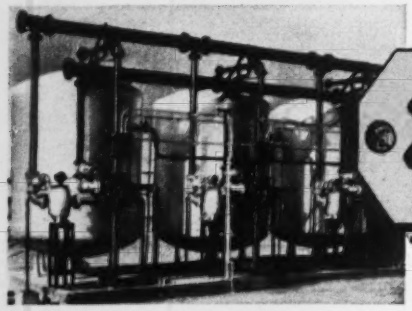

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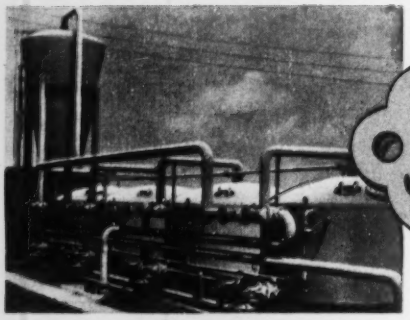

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JCA—New command post . . .

General Nold, the boss, possesses a brilliant record

emphasize the nature—and the inevitability—of the difficulties that JCA faces in getting some construction speed and efficiency out of a machine bristling with control gadgets and subject to the whims of multitudinous operators. It won't be easy.

• **The money involved**—An important and unanswered question relates to the size of the construction program that has been entrusted to JCA. Inquiries directed to this question bring the response that the information is classified.

All one can do is to make a guess based on what the individual projects, which have been announced, probably will cost. Another way is to take the announced rough figure of $1 billion for all U.S. military construction over here and subtract our share of NATO construction financing. Either way, a guess would be something in excess of $600 million—divided about 60% for airfields and 40% for Army supply corridor facilities such as depots, hospitals, and housing.

Considering that perhaps $100 million has already been spent, the construction program of JCA for the next two years may well involve $500 million—a not inconsiderable task and one upon whose successful completion rests a large extent of our effective military potential for the defense of Western Europe.

• **The man who heads it**—All this being so, the type of man chosen to head JCA becomes a controlling factor in its success. He must know construction—its technical and business aspects. He must know our military procedures—as much to avoid the unnecessary as to follow the rules—and he must have the confidence of the three military services for whom he is working. He needs to be a diplomat, a forceful administrator and an organizer who places major reliance on friendliness and fairness instead of tight military protocol.

In Maj. Gen. George J. Nold the Defense Department found an officer whose reputation rests on just such qualities. A civil engineering graduate of Purdue, General Nold has seen 36 years' service in the Corps of Engineers on every type of military and civil works assignment. The general has held important posts both in the U.S. and overseas.

As Deputy Chief of Engineers from July, 1951 to February, 1953—and before that as Assistant Chief of Engineers for Military Construction—he had acquired an intimate knowledge of all of our worldwide construction commitments and problems. During this period both the Thule airbase in Greenland and the complex of bases in Morocco were among his major responsibilities. Before that, as North Atlantic Division Engineer in New York, he was charged with the responsibility for construction being performed in Greece by the Corps of Engineers.

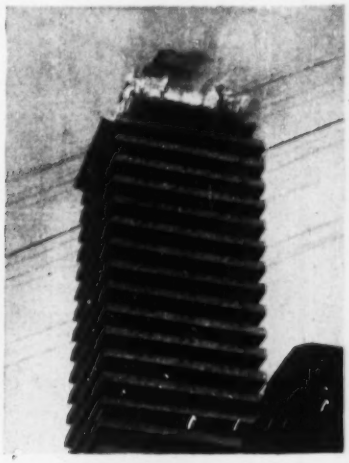
It was during the early war days in Alaska, from 1940 to 1944, that George Nold, became well known and widely admired by the construction fraternity for his friendly, knowledgeable and hard driving direction of U.S. contractors in building airbases, the Alcan Highway and the Alaska railroad cutoff. Few engineer officers enjoy the standing among the field men of construction that he does. General Nold thinks, acts and looks like a construction man himself. He is also a member of the American Society of Civil Engineers.

Military commanders under whom General Nold has served have also expressed their admiration for his qualities. General Joseph W. Stillwell labeled him a "superior officer" when he served as Engineer of the Tenth Army in the Pacific, and General S. G. Buckner, Jr., who succeeded Stillwell in command, wrote that "I regard this officer as a clear thinker, loyal, energetic, resourceful and capable of working well with others. He has a great deal of common sense."

As Engineer of First Army after the war, General Nold was described by General Courtney N. Hodges, the commander, as a "likeable, dignified, tactful officer who is aggressive and firm. He is energetic and dependable in accomplishing results." General MacArthur, after General Nold in 1949 had headed a special mission to the Far East Command to set up an integrated construction program, remarked that "I am much impressed by the completeness and thoroughness with which the entire project has been prepared in a comparatively short period of time."

All these accolades suggest that General Nold has the necessary standing among the military high command to permit him to operate with adequate authority and support. Add to this his unique ability to work with civilian construction people and gain their admiration and support, and the elements for success are provided.

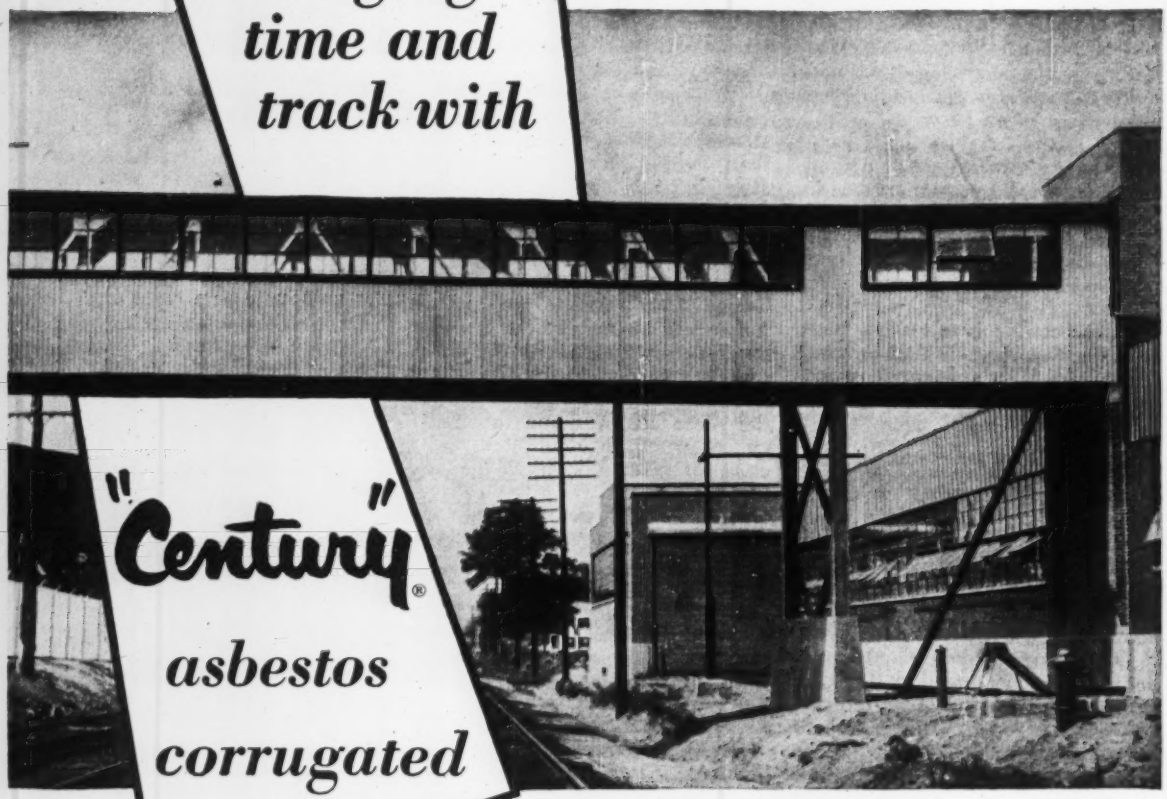
There is general agreement that JCA's head man has been wisely chosen. But only the future will tell whether any man—or any organizational setup—can solve the inordinately difficult problem of injecting speed and efficiency into the job of building U. S. military facilities in someone else's country. That is yet one of our great unsolved problems around the world.



Fire damages Mexican skyscraper under construction

A fire recently broke out among wooden forms on the top floor of Mexico City's 44-story Latino-Americana office building, the tallest structure in Latin America. Damage to the wooden forms—for placing concrete around the steel structural work—amounted to only $2,000, but damage to nearby stores was estimated at $35,000. Fire was started by hot steel from a welder's torch being used on the steel work at the 44th floor. City water pressure was insufficient to force water that high, but after burning for six hours the fire was put out finally by water pumped up a hose hauled up the side of the building.

Bridging time and track with



"Century"® *asbestos corrugated*

Inter-plant bridge of the Trumbull Electric Department of the General Electric Co. in Plainville, Conn. Sidewalls of bridge and the building on the right constructed of "Century" Asbestos Corrugated, and applied by Hampden Cornice Works Inc., Springfield, Mass. Supervisor of Construction: General Electric Realty Corp., Schenectady, N.Y. Engineer and Architect: Lockwood Greene Engineers Inc., New York, N.Y. General Contractor: The Gellatly Construction Co., Bridgeport, Conn.

"Century" Asbestos Corrugated makes an ideal siding for this new inter-plant bridge and building because of its outstanding durability and freedom from maintenance. After many years this long-lived siding will still be sound, serviceable, and weather-tight.

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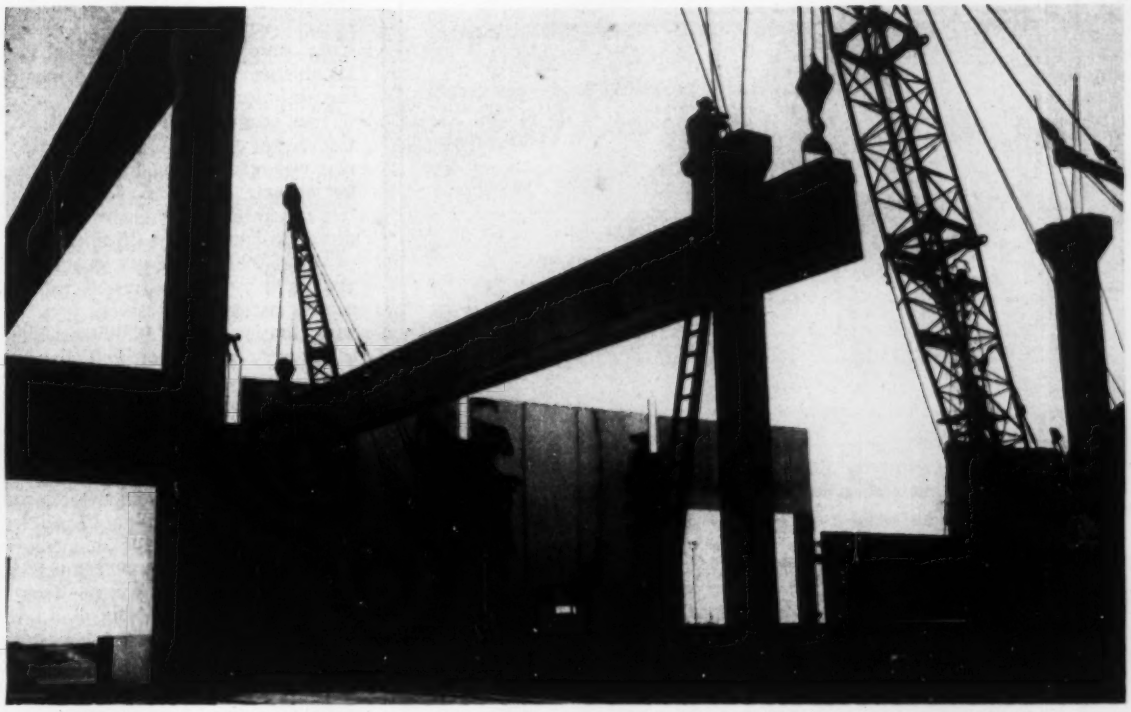


PRESTRESSED CONCRETE GIRDER—One of 82 for 75-ft spans in a Long Beach, Calif., warehouse—was erected with two cranes.

Low-cost warehouse with prestressed girders

Precast walls and structural frame enable contractor to meet rush schedule for completion of ship-cargo storage facilities and yet keep costs down

Nearing completion in Long Beach, Calif., is a 150x1,200-ft precast concrete warehouse that contains 82 prestressed girders spanning about 75 ft. This is the most extensive use of long-span prestressed beams yet made in a building in the U. S. And cost of the building was only $5.68 per sq ft.

The structure will house goods for overseas shipment to and from the Port of Long Beach.

Not intended to serve as a transit shed, the warehouse requires more compartmentation and the long-span, freedom-from-column requirements are not as rigid as, for example, in a 200-ft span, rigid-frame transit shed built at the same port a few years ago (ENR Dec. 23, 1948, p. 56).

The fact that the primary commodity to be stored is baled cotton had a substantial bearing on conception and design of the structure. For one thing, the building had to be fire-resistant—including a $96,000 sprinkler system.

The growth in cotton acreage in California has meant increased shipping, which in turn created an almost immediate need for the building. This urgency was the principal reason for adoption of prestressed concrete girders, since steel members—the alternate girder material—were under the allocation system and considerable delay would have resulted.

• **Girder cost estimates**—A cost estimate prepared by the engineers in advance of bidding showed that prestressed concrete girders would cost only 7½% more than rolled steel beams with cover plates and 17% more than welded steel roof trusses.

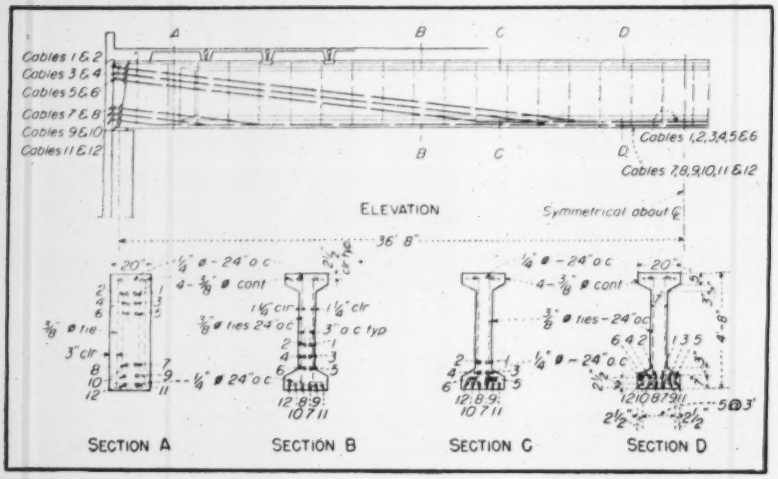
The estimates were prepared for a 150-ft wide building with 75-ft girder spans on 25-ft centers and a 25-ft clearance above the floor level. Costs per girder were predicted as follows: welded steel roof truss—$1,296; rolled steel beams with cover plate—$1,408; prestressed concrete girders—$1,511; and precast concrete beams—$1,690.

Despite the higher estimated cost, prestressed concrete girders were chosen in preference to steel because of the time element. Also considered by the designers was the relative fire resistance and maintenance costs of the two materials. There is no certainty, however, that if steel for trusses or rolled beams could have been obtained in time to meet the schedule that prestressed concrete would have been selected.

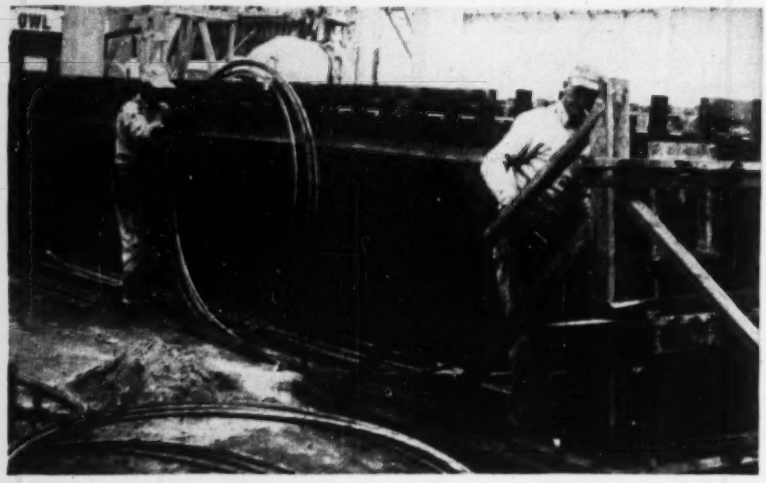
No data are available as to the contractor's actual costs, because the building was bid on a lump-sum basis. But the number of bids and the closeness of the bidding indicate that contractors had no sizable cushion in their figures. Johnson-Western Co. was low bidder for $1,072,718. This compares with the second low bid of $1,079,442; the third low bid of $1,108,030; and the high or 13th bid of $1,341,856.

• **Girder design**—The warehouse presented nearly ideal conditions for use of prestressed concrete. Since 82 girders were required, advantage could be taken of experience and economies gained in such repetitious procedures as casting and stressing the units. The owner demanded no more than one row of columns, thus, the 75-ft span required some sort of long-span girder or truss.

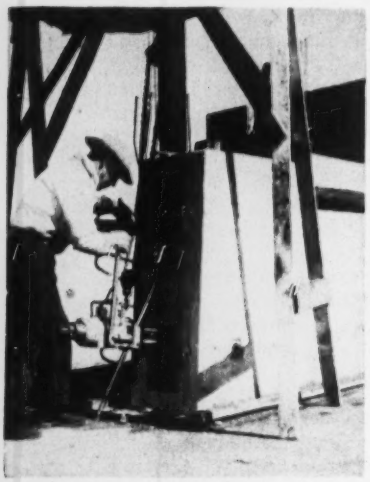
The girders, actually 73¾ ft long, were designed for the cables and prestressing method of the Prestressed Concrete Corp. of Kansas City, Mo. However, alternate bids were permitted for other methods, such as Roebling, Freyssinet and Preload. The Prestressed Concrete Corp. system was



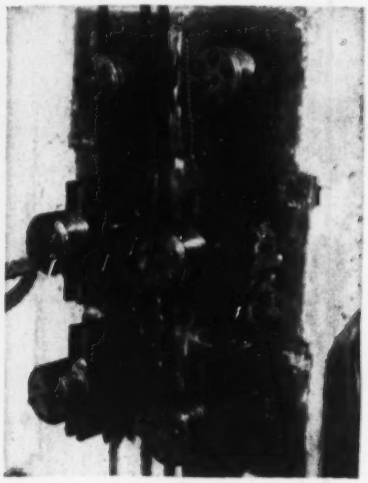
GIRDER DETAILS—Prestressing cables are assemblies of 7 wires, each ¼-in. dia. Twelve such cables go into each girder, with all cables positioned in the bottom flange at mid-span.



CABLES, fastened to a heavily braced steel end form (right), were packed in a rust-inhibiting compound and wrapped in paper to prevent bond.



STRESSING is done with one 60-ton hydraulic jack at each end of a cable. Wires have heads at ends for gripping.



STEEL PLATES hold cables after tensioning. Later, the shims were encased in concrete.

used by the successful low bidder. Actual prestressing was done by the contractor with Prestressed Concrete Corp. supplying only the cables, renting the stressing devices, and furnishing technical advice.

The beams are I-shape, with web thicknesses of 7 in. Only a 6-in. thickness was required for design purposes, but an extra inch was added to facilitate concreting. The beams are 56 in. deep and have flanges 20 in. wide.

The 5,000-psi, 28-day concrete in each girder was prestressed with 12 cables, each having seven ¼-in. dia wires tensioned to 145,000 psi. The cables were end-anchored. To prevent bonding, they were packed in a mastic rust-inhibiting compound and wrapped with paper. The wires have button heads at each end for gripping during tensioning and for end anchoring.

The girders are designed for a roof load of 60 psf, including 17 psf live load. But they are not designed to provide lateral force resistance necessitated by earthquake design. This is provided by the concrete roof slab which is assumed to act as a horizontal diaphragm transmitting lateral loads to intermediate and exterior walls that resist the forces in shear.

• **Contractor's lessons**—The contractor, in working with the girders, learned several things that may be as useful for other installations as they were on the Long Beach warehouse: Concrete for the lower flange of the girders was poured with the ½ in. aggregate omitted. Specifications indicated ¾-in. maximum aggregate but some difficulty was encountered getting the mix around cables to the lower flange. By omitting the ½-in. aggregate for this portion of the beam, a richer mix was actually developed and pouring was facilitated.

The weight of the cables was found to buckle ordinary wood forms for the end of the beams. Accordingly, ½-in. thick, heavily braced steel plates were substituted for the end forms. These were re-usable as were the rest of the forms, some of which were plywood faced and others were all metal.

Design called for stirrups of ¼-in. round bars on 12-in. centers. These were changed to ⅜-in. round bars on 24-in. centers to permit better cable slope where the cables were bent out into the flange elements of the girders.

The cables were positioned carefully to prevent eccentric loading, and cable stressing was carefully sequenced for the same reason. Cables were stressed from both ends to minimize extension into the poured keys. (The stressed cables are anchored by precut steel shims and the entire end assemblies are cast in concrete.)

For each girder, the first three

cables were stretched to half stress, after which the fourth cable was fully stressed. Then, the first three cables were each pulled to full stress. Finally, the remaining eight were stretched to full tension one at a time. The contractor found that a crew of two men could stress two girders per 8-hour work shift.

As the cables were stressed, the girders would arch up off the bottom form about ¾ in. at mid-span. When they were in place and the roof load put on them, the girders again flattened out. But this made the girder end fastening difficult. Accordingly, the units were bolted in place with only the fastening at the center columns fixed. Slight movement at the exterior columns because of the addition of the roof load was permitted by elongating the bolt holes to a 1-in. slot. These bolts were tightened after the dead load was in place.

The contractor was concerned that the units would not have enough lateral stiffness when lifted, and so the first girder was reinforced with temporary tensioned cable outriggers. However, this was found to be unnecessary and was discontinued.

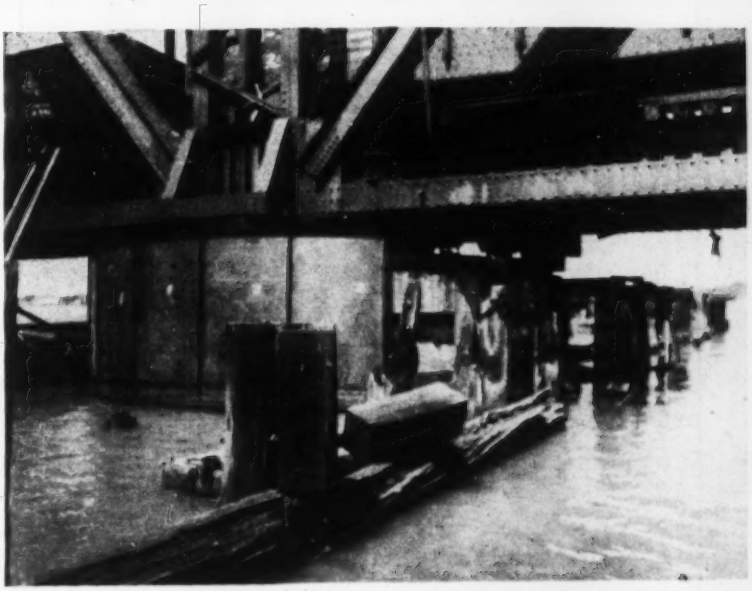
• **Precast concrete details**—The warehouse design employed interesting precast concrete details that would have been used regardless of the girder-type adopted. Six-in. thick tilt-up wall panels formed the exterior of the building. These units were 29 ft high and 22 ft wide and were reinforced with ½-in. round bars at 16-in. centers. After the wall units were lifted, 20-in. square wall columns were poured in place to anchor the assembly.

Interior columns were precast, as were longitudinal Vierendeel sway brace frames. Central monitors were also formed of precast units.

Roof panels were made of precast concrete units 25 ft long and 4 ft wide. These panels are 10 in. deep at the exterior flange and have 1¼-in. thick top slabs. They are bonded together by a grouted joint and are anchored to the girders by welding steel plate inserts in the slabs to steel angle inserts in the girders.

• **Credits**—The warehouse is being designed and constructed for the Port of Long Beach under the general supervision of R. R. Shoemaker, chief harbor engineer. The building was designed by J. H. Davies, consulting structural engineer of Long Beach, with James R. Bole serving as chief structural engineer on the design.

The building is being constructed by the Johnson-Western Co. for whom Laurence Sullivan is area manager and Ray Otti is project superintendent.



WROUGHT IRON COFFERDAM is shown during its erection above low water. Later it was lowered, to protect repair of bad concrete in tidal zone.

"Clamp-on" cofferdam repairs swing pier of B & O railroad bridge in tidewater

Masonry Resurfacing and Construction Co., of Curtis Bay, Md., which holds patents on a "clamp-on" cofferdam for concrete pile repair (ENR Nov. 1, 1951, p. 50), recently adapted its principles to the repair of a 24-ft dia pivot pier for a swing bridge near Baltimore.

The objective of the "clamp-on" system is to gird the defective structure with a jacket that can be dewatered to provide working space and dry concreting conditions. For pile repair, two floating-box halves are clamped together to make the cofferdam. Concrete encasement forms are built inside. After the repair is complete the cofferdam is removed and used for the repair of the next pile.

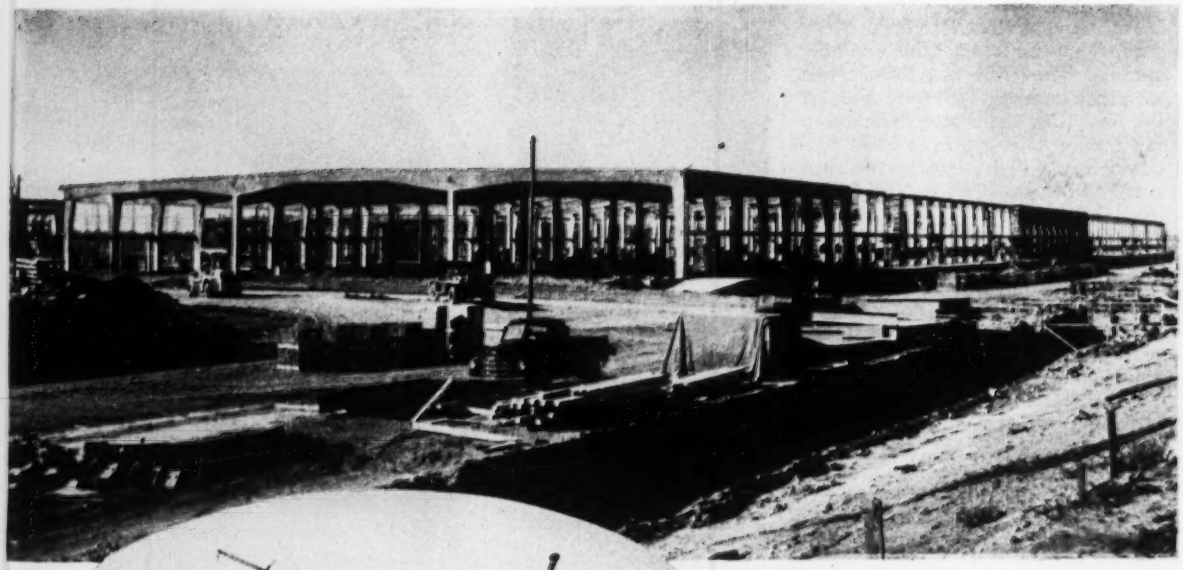
For the swing pier repair the cofferdam also served as a concrete form, and was left in place to furnish extra resistance to concrete deterioration. Made up of wrought iron plate segments 8 ft high, erected above low water, this cofferdam had a floor attached to the segments. The inner edge of the floor had a thick gasket that would fit snugly against the pier concrete, adjusting to minor surface irregularities.

When the segments were assembled, the cofferdam was lowered to position, its top above all but the highest tides, its bottom below the tide range, where bad deterioration had taken place. Support during erection and lowering was by wire-rope hangers from anchors in the pier itself. Nothing could hang from the bridge because it had to remain operative. One segment joint, which had been left open, was bolted tight, clamping the cofferdam home, and dewatering began. Before dewatering was complete and hydrostatic uplift became too great, brackets were installed between the pier and the cofferdam. In addition to resisting uplift, these would take the load of repair concrete.

Inspection of the old concrete revealed circumferential spalling as deep as 4 ft in the 4-ft tide range. Bad concrete was chipped out, reinforcing was doweled into the V-notch cross-section, and a full reinforcing cage was placed in the surrounding cofferdam space. Concrete buckets, handled by a railroad crane, dumped into crude hoppers that fed elephant trunks for final placement. The job was finished off with gunite above the cofferdam zone.

Net increase in the pier's diameter was 2 ft 8 in., which means the working space was 16 in. all around.

• **Management**—For the owner, the B.&O. Railroad, Gurney Dayett supervised the design, and C. R. Riley supervised construction. I. Leon Glassgold was in charge of work for Masonry Resurfacing and Construction Co.



One of the ten 200' by 1,027' Marine Corps Depot of Supplies Warehouses at Albany, Georgia.

The warehouses required 26,400 roof slabs approximately 5' x 18'6". During cold weather Lehigh Early Strength Cement helped maintain the daily production of 140 slabs without additional molds.

Form and overhead costs cut 50% with LEHIGH EARLY STRENGTH CEMENT

As the most practical and economical method of constructing the rigid concrete frames for the ten warehouses at the Marine Corps Depot, Albany, Georgia, the contractors used forms mounted on traveling scaffolds.

With Lehigh Early Strength Cement, a scaffold at each end of a building site moving toward the middle and each of two at the middle moving toward an end, the 54 beams and 216 columns of each warehouse were completed in 18 pours and the cycle continued to the next building site without interruption.

Without Lehigh Early Strength Cement, at least twice as many forms would have been needed and the cost of overhead would have doubled.

Let Lehigh Early Strength Cement save you time and money on your next job. Our Service Department will be glad to help with your specific problems.

Architects & Engineers: **DUNWODY-MAC EWEN, HALL & FERGUSON,** Architects of Macon, Ga., and The **J. E. GREINER COMPANY,** Engineers of Baltimore, Md.

General Contractor: **GRANNIS AND SLOAN, THOMPSON, STREET AND WATTINGER COMPANY** of Charlotte, N. C.

Project being accomplished for: **THE BUREAU OF YARDS & DOCKS, U. S. NAVY**

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DENVER TRIES DANCING. Random movement at Denver intersection while all vehicular traffic is stopped for about 18 seconds, is called "Barnes Dance" after proponent Traffic Engineer Henry A. Barnes.

Baltimore to try new traffic systems

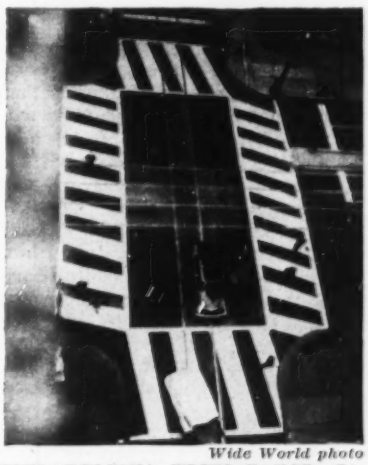
Four-way stop intersection control will be tried out in Baltimore, largest city to experiment with "scramble"

In Denver, and in Flint, Mich., they call it "Barnes Dance." In Sacramento, Calif., they call it "scramble." But whatever they call it, it adds up to a radically new street intersection control—which halts all traffic while pedestrians cross. Now Baltimore, Md., probably will test it, in another effort to unscramble an increasingly serious traffic problem.

The four-way stop for pedestrians is one of the most intriguing ideas now being tried out for untangling downtown traffic and pedestrians. But it is by no means the only innovation adopted by Denver engineer Henry A. Barnes, who is now to become Director of Traffic in Baltimore. He takes the job on July 15 at a salary of $18,000—more than double the Denver emolument.

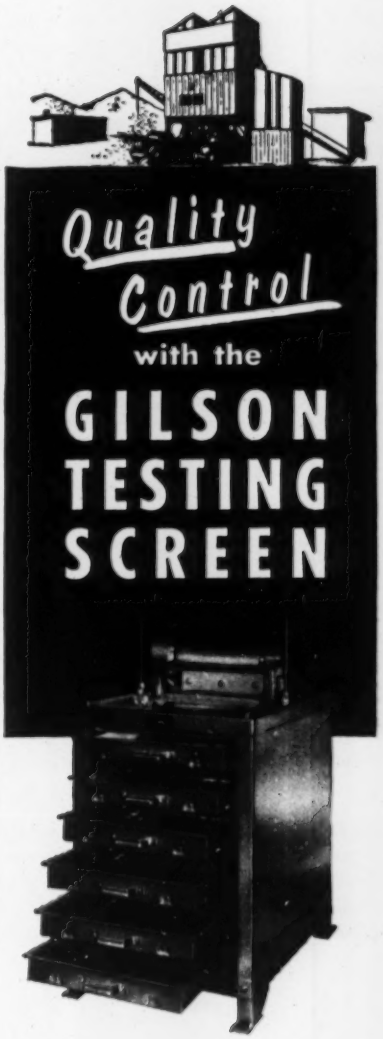
• **Tried in two cities**—Barnes' employment by Baltimore followed his one-month survey (in April) of the Maryland city's congested traffic. His proposals, outlined in a 172-page report, so pleased Mayor Thomas D'Alesandro of Baltimore that he induced Barnes to accept the traffic job (which pays $3,000 a year more than the mayoralty).

Barnes' ideas and actions were still a controversial subject and there was a mixed opinion of his work in Denver



Wide World photo

PHILADELPHIA TRIES PAINT. Big bold stripes to mark crosswalks at corners where accidents have totaled 29 in two years.



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COMMENT
from the BUTLER ENGINEER

Leis to Permafrost . . . and Super-Super Markets

You can think of Butler Bin whenever you cross the Hudson River on the new Nyack-Tarrytown Bridge. It will be the big link on the New York Thruway that connects Leon and Eddie's, the Stork Club and the Copa with Mr. and Mrs. America — and others less jelled matrimonially.

The piers for the bridge are poured by a huge dual central Mixing Plant — engineered and built by Butler. The Plant is a towering and busy edifice floating on a scow and it undoubtedly mystifies 99% of the shoreline superintendents. They probably figure it's some sort of secret weapon.

By the way, there's enormous activity in big Ready Mixed Plants this year. I'm busy engineering more Plants with 6 yard mixers than there are already functioning in the entire country.

Remarkable how many different problems we'uns at Butler Bin must study. The prospective 49th and 50th States, for example. I have to jump from leis to permafrost in designing Plants for Hawaii and Alaska.

We've just completed a Paul Bunyan-like Plant for a "super-supermarket" operation to supply all sorts of concrete masonry products, concrete pipe, central mixed concrete—yes, even asphalt. Hollywood couldn't describe the gigantic aggregate handling system. Strictly modern. It conveys from great stock-piles of a wierd variety of materials to the various plant components. Highly complex—but it all hums along smoothly as my wife's sewing machine.

Gotta 6 yard mixer in your attic which you'd like a plant built around?

The Butler Engineer

BUTLER BIN COMPANY
WAUKESHA, WISCONSIN

DANCEMASTER BARNES—He'll call the tune in Baltimore now.

when word spread that he was leaving after six years in that city.

Barnes went to Denver (pop. 415,786) in 1947 after 10 years as traffic engineer in Flint, Mich., (pop. 163,143), and now moves to Baltimore (pop. 949,708).

Denver Mayor Newton said he accepted Barnes' resignation "with regret" and announced promptly that "traffic engineering and planning will go ahead at full speed in Denver despite the loss of Hank Barnes."

• **Traffic pointers**—Barnes has left many marks in Denver during six years of traffic engineering that caused him to become the most controversial figure in Denver's modern municipal life:

• More than 20,000 traffic signs—some of them original creations.
• New traffic lights at 375 intersections.
• More than $3 million already spent carrying out the traffic plan.
• A $1.85-million bond issue—up for vote June 16—for traffic improvements to unstop several remaining bottlenecks.
• One-way streets adding up to 72 mi—where there had been 10 mi.
• Quadrupling the original 80 mi of through streets to 320 mi.
• The "Barnes Dance" at every major downtown intersection.

• **Barnes Dance measures**—The system of pedestrian crossing, first applied in Schenectady, N. Y., in 1942, operates when the lights controlling motor traffic at an intersection turn red for all directions.

Beneath the motor control lights are neon lights that flash "Walk." The pedestrians then cross either street—or along the hypotenuse of the right-angle intersections if they wish.

After their inning, the pedestrians wait while motor traffic moves. A neon sign flashes "Don't Walk" during that period.

This speeds up right-turning traffic, which doesn't have to wait for pedestrians.

• **Electronic thinking**—Barnes gained his widest reputation among traffic experts for an electronic brain which he conceived and, with the help of General Electric, put into successful operation.

This is a master control that regulates all traffic lights in downtown Denver according to the flow of traffic, which is measured by treadles set in the pavement on key streets. The volume of traffic determines the length of time that lights remain red or green at any given intersection. Barnes had made plans to extend this control to outlying residential sections to insure swift movement of traffic during rush hours.

Barnes spotted traffic lights in the middle of some blocks to break up the traffic flow.

On one major viaduct, only three lanes wide, lights are installed so that heavy traffic gets two out of the three lanes.

• **They call it "Scramble"**—Officials of Sacramento, Calif., praise the four-way system of traffic control in the city's busy downtown business district.

No pedestrian accidents have been reported since the system has been in operation. On the basis of former experience three pedestrian accidents might have been expected between last September and this April.

As a result of the longer wait, both pedestrian and motor traffic has become somewhat more congested, particularly at certain hours. This condition is being alleviated by the use of separate light controls at special locations for shopping hours, early evening

hours and during the early morning hours.

Sacramento Traffic Engineer D. J. Faustman concludes that:

- The system should be used only at those locations where there is considerable conflict between pedestrians and turning vehicles which results in undue delay to vehicle movement.
- The system will cause much less congestion if it is possible to alter the timing signals at various hours of the day.
- It is absolutely essential that the signal lights intended for vehicle operators be invisible to the pedestrians and that the vehicle operators be unable to see the traffic light operation on the cross street.
- Strict obedience on the part of both pedestrians and vehicle operators is necessary if the full advantage of the system is to be obtained.

Detroit accepts bid for redevelopment property

Detroit, Mich., has accepted the $1,266,000-bid of the Housing Corporation of America, a New York development company, for the 129-acre Gratiot redevelopment property (ENR, April 16, p. 61).

The property is bounded by Hastings, Lafayette and Dequindre Sts.

Plans call for tall apartment buildings and terrace-type two-story buildings with a total of 1,750 dwelling units. Total cost: About $25 million, with a possibility it may go as high as $30 million.

Airport and civic center meet defeat in Los Angeles

A $33-million bond issue for improvements to the Los Angeles International Airport and a $27-million issue for a municipal auditorium failed to carry in Los Angeles municipal elections May 26.

Both issues got majorities but failed to get the necessary two-thirds. This was the second time around in recent years for both projects.

Los Angeles' Mayor Fletcher Bowron, storm center of the long battle over approval of the city's proposed $110-million public housing program, was defeated for re-election by Rep. Norris Poulson.

Public housing probably was the major campaign issue. Bowron has insisted that the city was legally obligated to carry through the housing program. Poulson accused Bowron of ignoring the will of the voters (who disapproved the housing project by a 3-2 count last year) by failing to end

Higher TORQUE CAPACITY in New, more compact air-actuated clutch

New Model PO Advantages

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Twin Disc announces the first of a new series of air-actuated clutches. Available now in two and three plate 24" sizes, the new model clutches possess many outstanding design features for greater performance.

To meet installation limitations, they have been designed for minimum weight, width and inertia mass—yet with even greater torque capacity.

Air-cooled release springs, operating in conjunction with new flat release valves employing a proved diaphragm seal, provide positive, quick-action release. Transmission of clamping force through slotted asbestos plate for adequate insulation, assures long diaphragm life.

Why not specify Twin Disc on your designs requiring air-actuated clutches? Contact your nearest Twin Disc Factory Branch Sales Office or the Factory for engineering recommendation.

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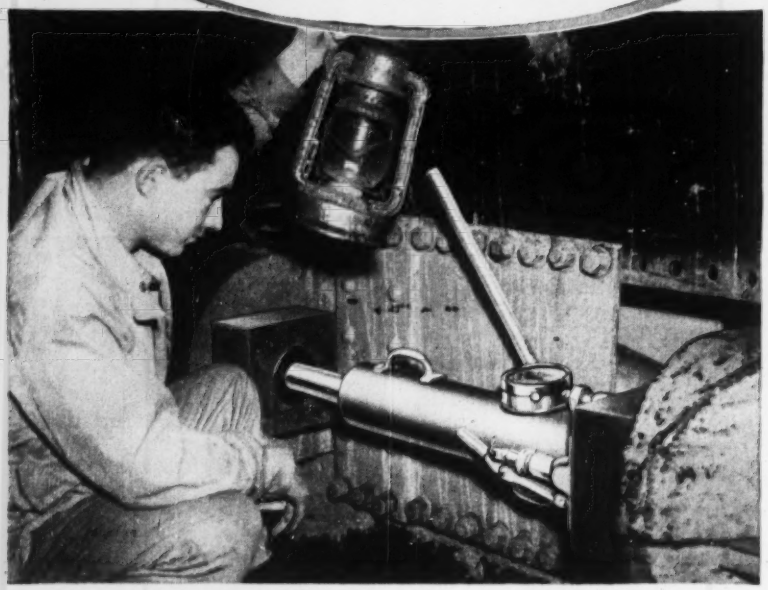
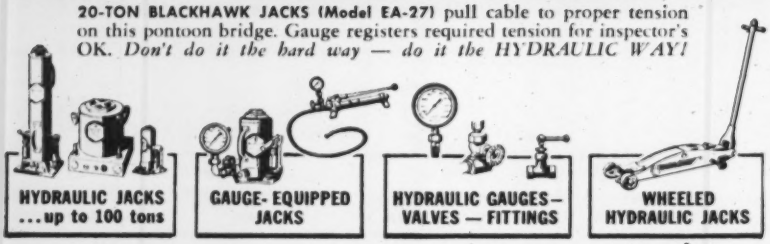
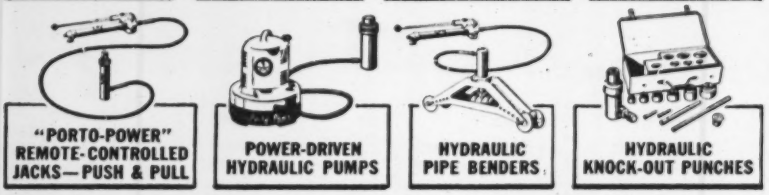


20-TON BLACKHAWK JACKS (Model EA-27) pull cable to proper tension on this pontoon bridge. Gauge registers required tension for inspector's OK. *Don't do it the hard way — do it the HYDRAULIC WAY!*





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the program, and promised to do his utmost to negotiate a cancellation of the contract entered into by the city and the City Housing Authority in 1949.

Poulson maintained that private building can clean up slums and said flatly that "the city, county or federal government should not build homes."

Engineers appointed for big Boston project

Boston's big "Back Bay" project took definite form late last month with the formation of the Stevens Development Co., headed by Roger L. Stevens, to handle the development, and the appointment of Stone & Webster Engineering Corp. of Boston as consulting engineers and construction managers.

Stevens, 42-year old New York real estate operator, announced that the engineers and architects are "going to work immediately on the development of the project".

Total project cost is expected to run about $75 million. The building complex including office buildings, a theater, a garage and stores and shops will be erected on the present site of the 28-acre Boston & Albany R.R. yards. Construction will start in about two years following the railroad's move to a new location.

(See ENR, March 5, p. 45 for complete details of the project.)

Municipal briefs . . .

• **Philadelphia bridge**—The Pennsylvania Public Utility Commission has authorized construction of a new $1.4-million highway bridge in Philadelphia. The structure will carry U. S. Routes 1 and 30 over the Schuylkill River and Reading R.R. tracks parallel to the existing City Line bridge at Fairmount Park.

• **New Jersey hotel**—If they can afford it after the races, patrons at the Camden, N. J., race track will soon have an opportunity to spend the night at a new hotel to be built near the race course. Construction is expected to start soon on the 12-story building which—with a projected shopping center nearby—will cost about $4 million to $5 million. Eugene Mori, president of the Garden State Racing Association, is the sponsor.

• **Mobile station**—The Louisville & Nashville R.R. is going to start construction of a new passenger station at Mobile, Ala., within the next couple of weeks. Cost: About $850,000.

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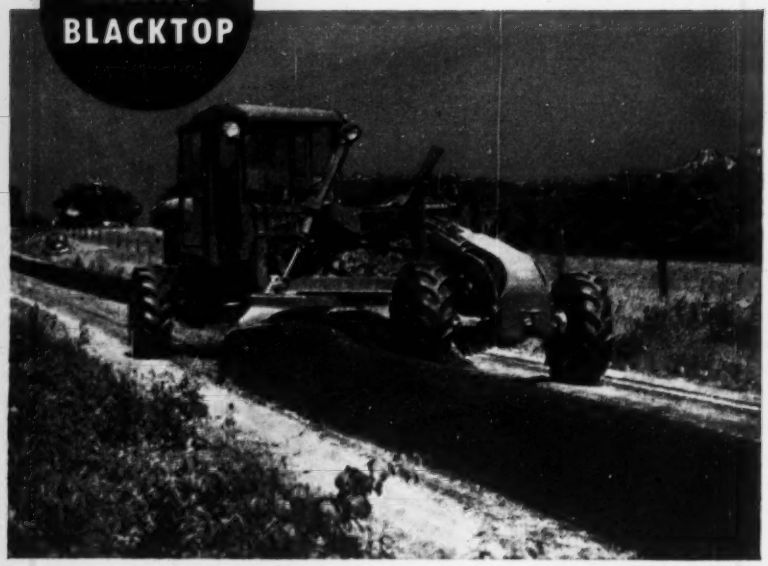

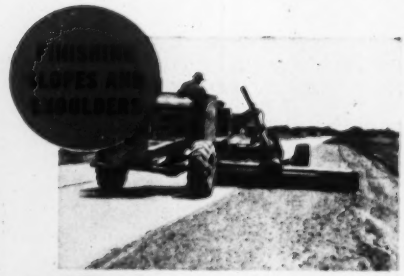

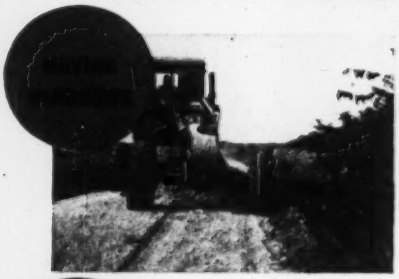

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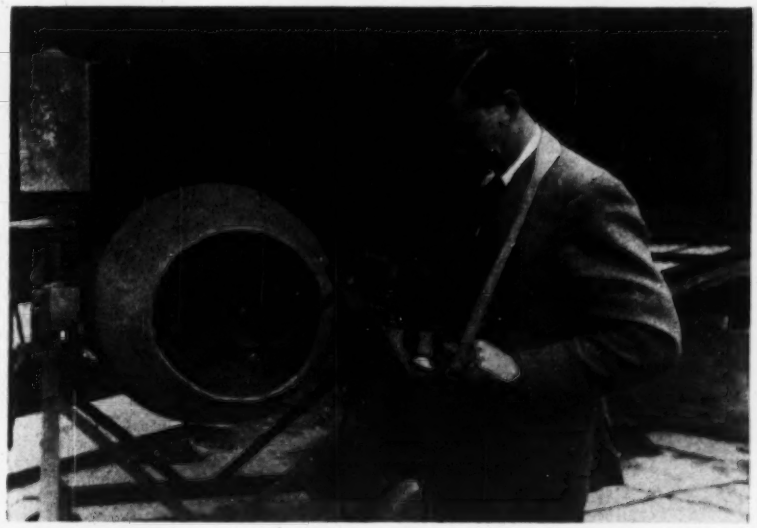
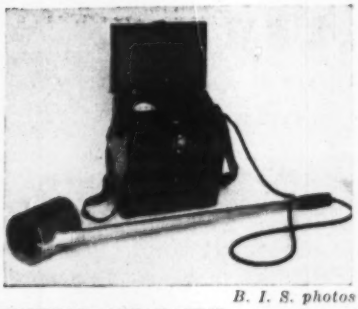


TESTING CONCRETE MIX, canister on end of tubular arm has electrodes in contact with concrete. Water-cement ratio is determined by amount of current flow between electrodes.

New instrument tests concrete mix; water-cement ratio found electrically

A concrete mix electric testing apparatus measures water-cement ratios accurately within a minute of its application to a wet mix. The instrument, weighing 24 lb altogether, has been developed by the Civil Engineering Research Laboratories at Sunbury-on-Thames, Middlesex, England. Testing water-cement ratios with an aid of this sort makes possible an easier control on specific concrete mix requirements.

The two parts of the ratiometer consist of an electrode canister at the end of a tubular arm, and an instrument case housing an ammeter, a vibrating unit, and batteries.



B. I. S. photos

TESTING APPARATUS, consisting of electrodes and canister, tubular arm, ammeter and battery case, has total weight of 24 lb.

The basic operation of the electric tester involves passing an electric current through a concrete mix by means of two electrodes, a short distance apart on the base of the canister. Inside the canister a high-frequency vibrating unit operated by the vibrator in the instrument box, causes a slurry of water, cement, and any fine aggregate dust to separate out around the electrodes. When the canister is raised until only its base is touching the concrete, the amount of current passing through the slurry between the electrodes is measured on the ammeter on the instrument box.

This ammeter is calibrated with one side of the dial reading "Too wet" and the other reading "Too dry". A small central area reads "O.K." indicating that the mix is correct for a predetermined ratio. This predetermined ratio of water and cement, to which the calibrated ammeter is oriented before testing, is based on the conductivity of a batch of concrete that meets the precise water-cement ratio specified for the job at hand.

A batch of concrete of precisely the required water-cement ratio, specified by the designer, is made from materials to be used on the site. The electrode canister is then placed in this sample batch, and the switch-on knob

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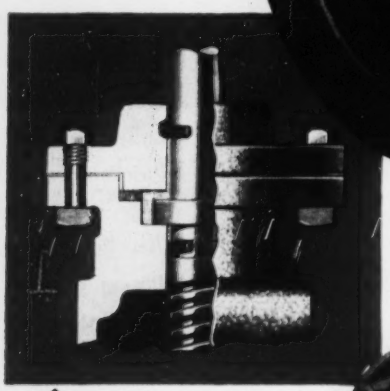

"O" Ring Seal construction showing lower "O" ring compressed when gate valve is fully open and under pressure.

Unit gate assembly showing exclusive "four point contact" wedging mechanism. (Can be furnished with all bronze disc and wedging mechanism when specified.)

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on the instrument case is turned to "calibrate". An adjustment knob then is set so that the ammeter's needle is pointing to the "O.K." position. This preliminary adjustment insures that discrepancies due to the condition of the battery are compensated for automatically.

The particular mix, adjusted for in this fashion, will have its own code number, which is noted for testing other batches on the site. When other batches are tested, the switch-on knob is turned to "Test", the electrode canister put in the concrete, and material adjustments to the mix are made according to the state of the mix indicated on the ammeter dial.

Conversely, by plotting a series of code numbers of various water-cement ratios for a given proportion of aggregates, a curve may be obtained to determine the ratio of water-cement of an unknown batch of concrete. In this case the adjustment knob for the ammeter is turned until the pointer reads "O.K." and the code number of the mix obtained. The code number is then read on the plotted curve giving the corresponding water-cement ratio.

A chart with various code numbers for different given aggregate proportions of concrete mixes is supplied, with this testing instrument, by the Civil Engineering Research Laboratories.

Karachi water supply boosted with floating pump station

Karachi, the capital of Pakistan, recently had its water supply increased by 10 mgd when a new floating pumping station on the Indus River, 65 miles east of the city, went into operation. Karachi, facing a serious water shortage, turned to the Indus as the only available source to augment supplies from wells and the Haleji reservoir, 55 miles to the east.

A permanent pumping station could not be built on the Indus since the river shifts every year through the alluvial silt that forms its banks. Contending with this factor, U.S. engineers and British contractors helped Pakistan engineers to design a three-pontoon floating pump station anchored in the Indus River. Water is pumped by 18 diesel engines through a masonry-walled conduit linking the new station with the Haleji pumping station where a new filtration plant has been constructed. The water is transported to Karachi by gravity through reinforced concrete pipe. In Karachi it is raised by pump to a 20,000,000 gallon storage reservoir.

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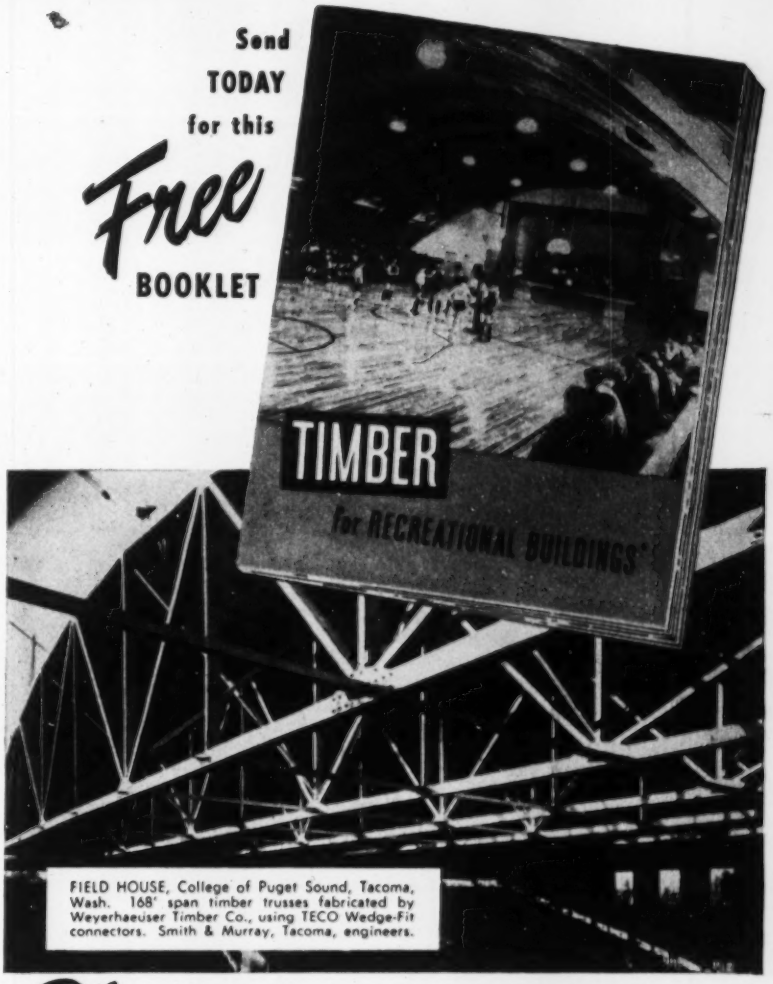

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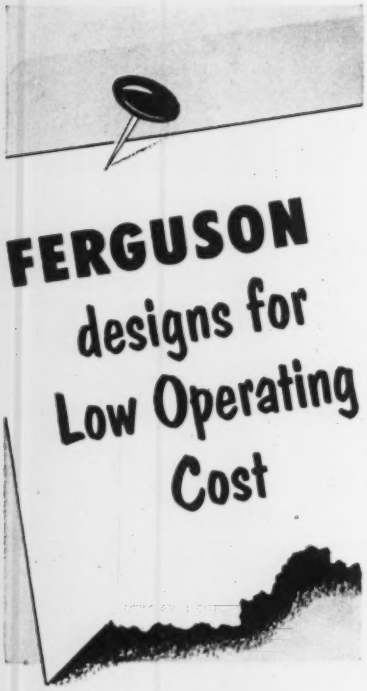

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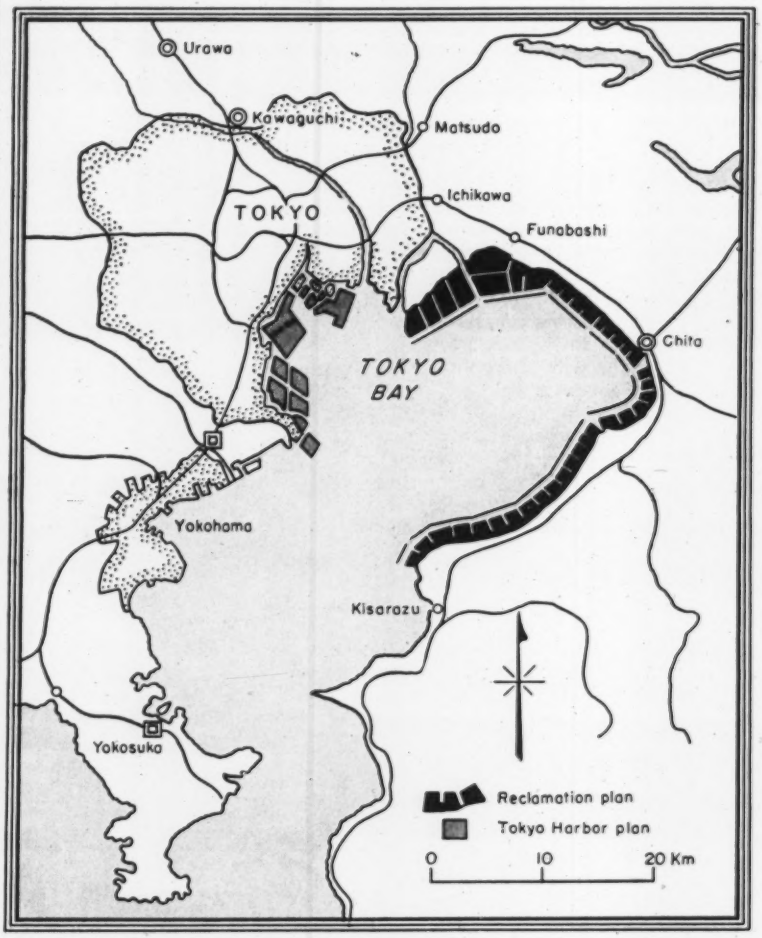

RECLAMATION WORK in Japan's Tokyo Bay will involve extensive dredging for new land and the expansion of harbor facilities.

Land reclamation planned for Japan; Tokyo harbor plan under way

The first stage of a reclamation project that will add thousands of acres to land-hungry Japan in Tokyo Bay, is to be started by the Hawaiian Dredging Company in October. HDC has one 700-ton suction dredge on the site for the immediate reclaiming of 22,000 acres along the northeast shore of Tokyo Bay. If the estimated cost of $10,000 per acre proves nearly accurate, Hawaiian Dredging is prepared to bring in five more dredges to extend the reclamation to 1,500,000 acres.

HDC has a contract with private Japanese firms and the reclamation work will be done piecemeal as the demand for land develops. The reclaimed land can be sold easily for twice its estimated cost.

• **Harbor extension**—Tokyo's harbor plan involves reclaiming some 4,000 acres of land as site for piers, storage depots, a harbor railway, and a new enlarged airport. Japan has been reclaiming land around the rivers near Tokyo since the turn of the century but still needs more ship handling areas for the increasing ship tonnage now being handled every year in Tokyo harbor.

Breakwaters and anchorage dredging in the relatively shallow harbor are included in the new plans, as is new land for industrial plants manufacturing cars, trains, and aluminum. The harbor plan is under way with Japanese construction companies doing the work.

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And while you're there, watch the mobility on true tractor-type crawlers. Note how smooth hydraulic control enables the operator to "feel" the load at all times. It's easier on both man and machine. And far easier on maintenance. You'll sell yourself on P&H in a hurry.

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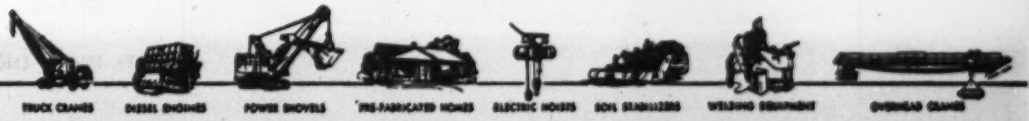

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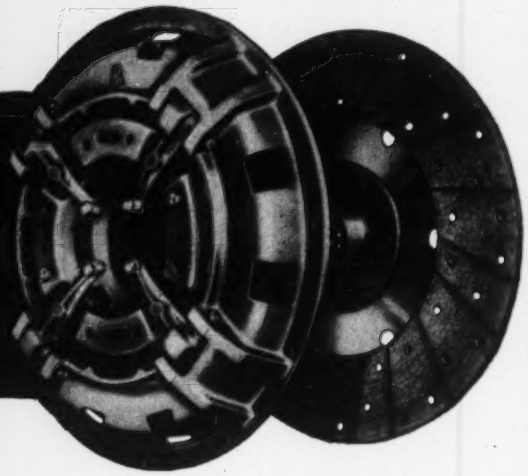
Lipe Constant Capacity CLUTCH



Just as long as there's the least bit of wearing surface left on the friction material, the Lipe Constant-Capacity Clutch maintains its torque capacity. A unique application of the toggle principle automatically compensates for friction material wear. The constantly increasing leverage of the toggle —which never goes over center—builds up pressure in almost direct ratio to friction material losses and compensates for fading pressure of expanding springs.

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PARALLEL CONTACT— because arrangement of the toggles assures a uniform pressure application pattern. Every square inch of facing area engages simultaneously, preventing highly concentrated heat areas and spot burning.

LIPE Constant-Capacity CLUTCH

- Engages firmly and smoothly
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- Automatically compensates for fading pressure due to spring expansion and fatigue
- Balanced spring pressure through toggles maintains parallelism of pressure plate
- High thermal efficiency dissipates heat rapidly
- Internal cooling protects springs from overheating and loss of temper
- Automatically compensated pressure needs no adjustment

NO SERVICING— because these self-compensating, non-adjustable clutches insure automatic internal adjustment throughout the life of the clutch facings.

SOFT ENGAGEMENT— because the toggles absorb the initial energy of the springs... and because the speed of the toggle action fades as the pressure plate approaches the friction element.

HIGH THERMAL EFFICIENCY— because the massive plate, ribbed for rapid radiation, is cooled by generated air currents.

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INTERNATIONAL

Sardinia hydro project to add to island's potential

Three gravity arch dams connected by tunnels 5 miles long, a hydro-electric plant, and an aqueduct serving Sardinia's capital, Gagliari, and 22 other towns, are in the first stages of construction. The project called the Media Flumendosa, is one of the largest undertakings in Italy's Plan for the South, a long range development of the country's industrial and natural potential. One of Italy's largest contractors, Sogene of Rome, is building the dams and connecting tunnels for the $48-million Flumendosa project.

Smallest of the dams will be 200 ft high and the largest will be 330 ft high. The three dams together will provide a storage capacity of 330,000 acre ft. A six-mile tunnel, to be built by the Di Penta Company of Rome will carry the water to a power plant capable of developing 14,000 kw.

The aqueduct will supply 200,000 people with running water for the first time in their lives. Irrigation canals, totaling 700 miles, will make possible the irrigation of 125,000 acres.

At present Sardinia has more electric energy than is needed for its population, but the Italian government is carrying out the project in the hope of a quarter million people migrating to Sardinia from Italy's crowded mainland.

International briefs . . .

• **Programs in Egypt**—A ten-man Point Four mission is in Egypt to aid in planning a $25-million rural development and resettlement program. The project involves the reclamation of 80,000 acres of land. In another project the Egyptian government has set aside $20-million for the first phase of a ten-year highway development involving 2,200 miles of new macadamized routes.

• **Philippine airstrip**—U. S. Navy Seabees are filling swamps and cutting down hills at Subic Bay, Luzon, to build the Navy's most westerly air base. The $60-million project will have a runway 8,000 ft long and 200 ft wide with approaches of 1,000 ft at each end. Last year $17 million was spent, and $21 million has been earmarked for construction this year. Hydraulic fill of coral and rock from the ocean floor accounts for one-third of the total material moved to construct the air strip at a height of only 7 ft above mean sea level.

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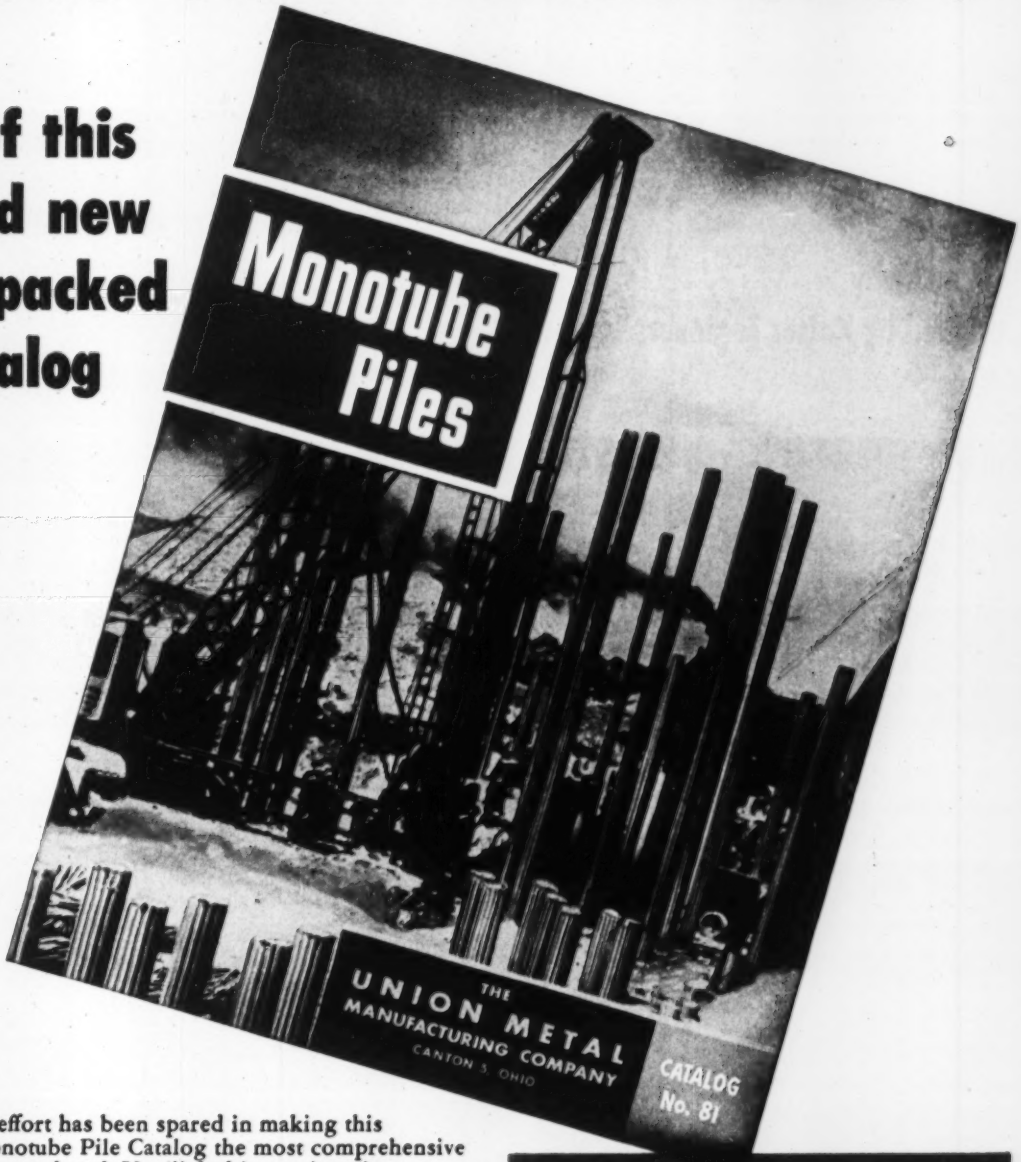

NO effort has been spared in making this new Monotube Pile Catalog the most comprehensive one ever produced. You'll find its engineering and test data, descriptive material, numerous application photos, etc., to be interesting, helpful and valuable as a reference source. For your copy, use the handy coupon or write to The Union Metal Manufacturing Co., Canton 5, Ohio.

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Franks is new president of Portland Cement Assn.

Carl D. Franks, civil engineer and executive vice-president of the Portland Cement Association, Chicago, is the new president of the trade group. His election to the top post was announced by R. A. Hummel, chairman of the association and of Lone Star Cement Corp. Franks succeeds the late Frank T. Sheets.

G. Donald Kennedy, vice-president, since May, 1952, steps into the post vacated by Franks, and Edward F. MacArthur becomes the new treasurer.

Franks, a graduate of Purdue, joined the association in 1916 as district engineer in charge of the Indianapolis office. He was appointed Midwestern Regional Manager in 1924, directing the activities of seven district offices.

In 1948 Franks was elected vice-president for promotion and supervised such activities for the next four years in 46 states, the District of Columbia and British Columbia. He was appointed executive vice-president in March, 1952.

Kennedy, a graduate of the University of Michigan, served as State Highway Commissioner in Michigan and as vice-president of the Automotive Safety Foundation before joining the Portland Association in 1950 as consulting engineer and assistant to the president. He has had wide experience in structural, municipal and highway engineering. Kennedy was elected vice-president in May, 1952.

MacArthur, an accountant, is a graduate of Northwestern University and joined the association in 1941.

Ohio Turnpike creates job

The Ohio Turnpike Commission is holding open a job for Maj. Gen. Robert S. Beightler, World War II commander of Ohio's famous 37th Division and one time state highway director. The commission has just created the post of executive director to head the operating staff of its $326-million toll superhighway which will run 241 miles across northern Ohio. It plans to offer the post to the general.

Beightler isn't out of the Army yet. But according to James Shocknessy, commission chairman, he's "ready and willing" to take the job as soon as he retires. As of now, it looks as if he will be put on the retired list by July 1.

Just what Beightler's pay will be isn't known yet. Shocknessy says it will be negotiated with Gen. Beightler.

Careers . . .

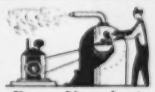
• **Appointed** – McLean Contracting Co., Baltimore, has a new executive lineup: **Frank B. Beasman,** board chairman; **Edward F. Blake,** president; **Edward P. Coblentz,** vice-president and secretary; **W. Leonard Smith,** vice-president and treasurer . . . **Harold E. Olson** takes over the newly created post of executive vice-president of Andrews-Knapp Construction Co., Inc., New York. . . **James B. Kelly** becomes vice president of McClosky Co., Pittsburgh . . . **F. L. Whitney** is chief engineer of Walter Kidde Constructors, Inc., New York. He has been chief engineer for H. K. Ferguson Co.'s eastern district . . . **G. D. Sauer** has been appointed chief engineer for Angus Robertson Ltd., Montreal.

• **Local government appointments**– **William H. Rogers, Jr.,** was renamed chief engineer of the North Carolina Highway Commission . . . **Eugene A. Schmidt,** a construction engineer for Milwaukee, Wis., has been named to a new post as engineer-in-charge of the engineering division.

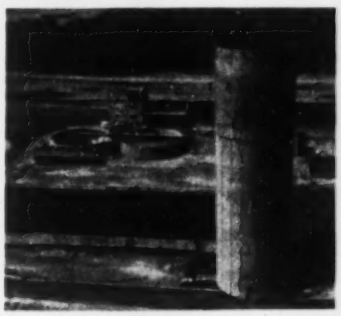
• **Retired–Maj. Gen. Patrick H. Tansey,** field representative of the Corps of Engineers, is retiring after 35 years service . . . The head architect of the Navy Bureau of Yards & Docks, **Howard C. Sullivan,** is retiring after 40 years with BuDocks.

• **Honored–Raymond C. Reese,** Toledo, Ohio, structural engineer, has received the 1953 award of the Concrete Reinforcing Steel Institute.

what's NEW in Engineering



Supersonic waves pulverize rock in a new milling machine. Recently demonstrated at Reno, Nev., by its inventor Joseph Bassick, the machine turns nonmetallic rock to powder instantly. Crushing impact is delivered by sound waves. It promises to work on metals, too.



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A new gadget—the pocket-sized double right angle prism—is proving a boon to many engineers in the field. Major advantage is the fact that you can look through it—straight ahead on the line of sight—and at a right angle at the same time.

"Engineering Statistics and Quality Control" is an important new book by Irving W. Burr, professor of mathematics at Purdue. Due for July publication, it is clear, unified, practical. Primary emphasis is on statistics most immediate and usable in industry.

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Dimensionally Stable Timber Trusses...

General Services Administration warehouse, Seattle, Washington. Tim-Flat parallel chord trusses of 68-foot span are spaced on 14-foot centers. Roof structure is completed by purlins, 2-inch tongue-and-groove sheathing and built-up roofing. Ward & Bolles, San Francisco, were architects. Structural engineers were Ellison-King, San Francisco; A. T. Kane, Seattle, was consulting engineer; Barrett & Hilp were general contractors.

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OBITUARIES

Germany, died there May 1. A former Chicagoan, he was an assistant state highway engineer from 1936 to 1942, with office in Springfield, Ill. He left the Army as a major in 1947 and remained in Germany as a civilian construction chief.

John T. Herlihy, 68, general superintendent of operations in Michigan for Herlihy Mid-Continent Co., Chicago, was killed in an automobile accident May 25, near Monroe, Mich. He had been in Michigan for two years supervising the construction of a $50-million power plant near Erie, Mich., for Consumers Power Co., of Jackson, Mich. His home was in Chicago and he was a brother of Frank J. Herlihy, president of the company.

F. Barnard O'Connor, 61, a civil engineer and head of the Alphons Custodis Chimney Construction Co., with which he had been associated for more than 40 years when he retired two years ago, died in New York City, May 26. He was a C.E. graduate of Cornell University. His firm has built many large industrial chimneys in the East.

Spencer W. Butler, 54, an engineer for the Ford Motor Co., died at Cleveland, Ohio, May 25. He was a graduate of M.I.T.

Louis M. Chokla, 74, a C.E. graduate of the University of Texas, died at East Rockaway, N. Y., June 1. For nearly 30 years he carried on engineering work at Austin and Dallas, Tex. He worked on construction of the Elephant Butte Dam on the Rio Grande.

G. W. Fentress, 55, an inspector of the Army Corps of Engineers, died at Louisville, Ky., May 24. Previously he had been an investigator for the War Assets Board and an agent of the War Surplus Board.

Louis Gassoway, 49, of Glascow, Ky., president and founder of the Gassoway Construction Co., died May 29.

Earle B. Phelps, 76, for the last 9 years on the engineering school staff of the University of Florida, died at Gainesville May 29. For 18 years he was professor of sanitary science at Columbia University, New York, and was for 6 years chief of the division of chemistry with the U. S. Public Health Service. He was a former consultant of the state boards of health in Massachusetts and New York, and was the author of books including "Stream Sanitation" and "Public Health Engineering."

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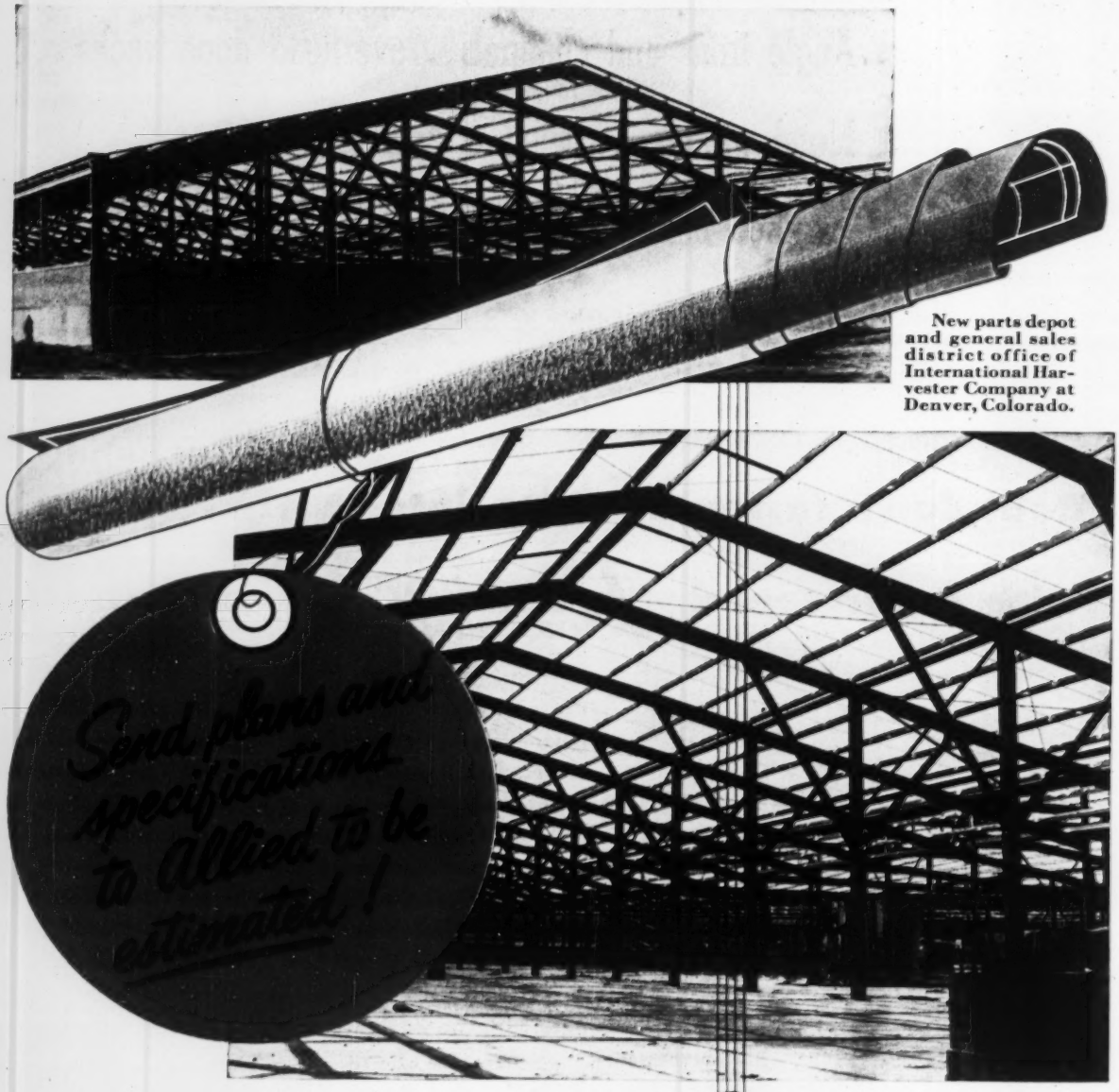

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OBITUARIES

Charles Johnson Chenworth, civil engineer assistant to the general manager of the Atlantic Coast Line Railroad at Wilmington, N. C., died May 15. A graduate of Baltimore City College and Mt. St. Mary's College, Emmitsburg, Md., he was transferred to the Atlantic Coast Line's Wilmington office from Savannah, Ga., in 1924.

Howard R. Wilson, 56, an authority on highway accounting, died at College Heights, Md., May 19. He was fiscal manager of the Bureau of Public Roads. He had handled billions of dollars of public expenditures. He joined the bureau in 1923. For many years up to the time of his death he was secretary of the committee on uniform accounting procedures of the American Association of State Highway Officials.

Eugene P. Roundey, 77, a civil engineer who had been associated with street railway and bus transportation in Utica, N. Y., for 35 years, died May 23. In 1918 he became engineer in charge of the Utica lines of the former New York State Railways.

J. Clifford Willis, 64, Newark, Del., builder and contractor, died May 22. He built many homes and buildings in Newark, including the Armory, fire house, Farmers Bank and the State Theater.

Philip Marcuson, 58, construction company owner, died May 24, in Pittsburgh, Pa. He operated the Merit Construction Co. for several years.

Joseph Smith, 67, a pioneer in concrete building construction, died in Syracuse, N. Y., May 29 of injuries suffered May 26 in an automobile accident. A civil engineer, he was a graduate of New York University. He had done considerable building in Syracuse, and was planning a million-dollar, 10-story apartment building at the time of his death. He was the father of Arnold R. Smith of the staff of ENGINEERING NEWS-RECORD.

John H. Crosta, 80, a retired contractor of Lackawanna, N. Y., died May 22. He went to Lackawanna about 1900 as an employe of the American Bridge Co., which was then building the Lackawanna plant of Bethlehem Steel Co. He became a general contractor in 1906 and retired in 1920.

Louis F. Kealy, chief of construction for the Munich military post, Munich,

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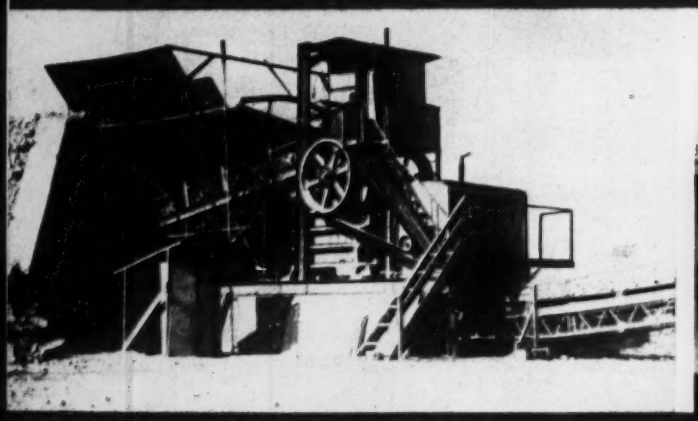

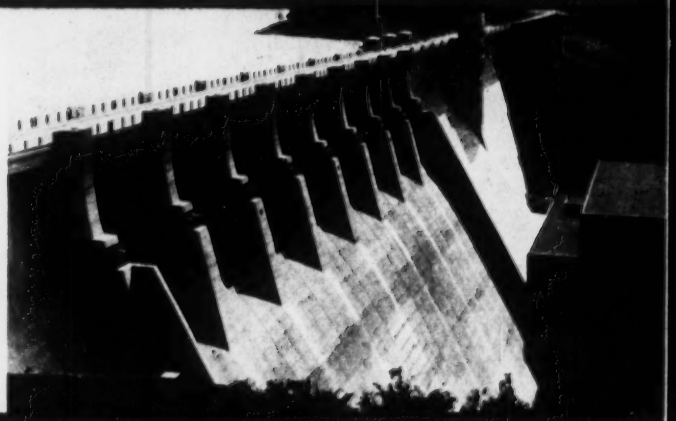

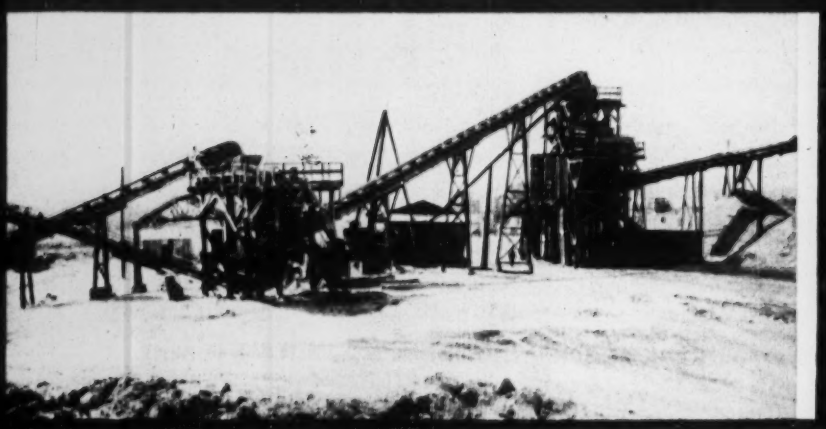

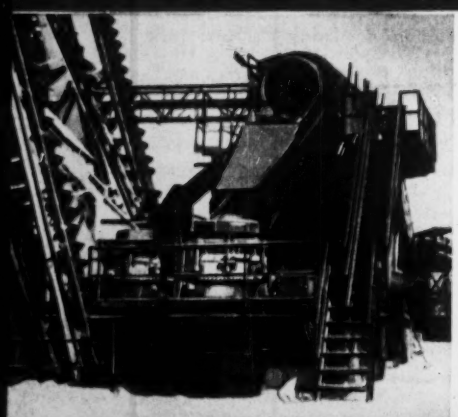

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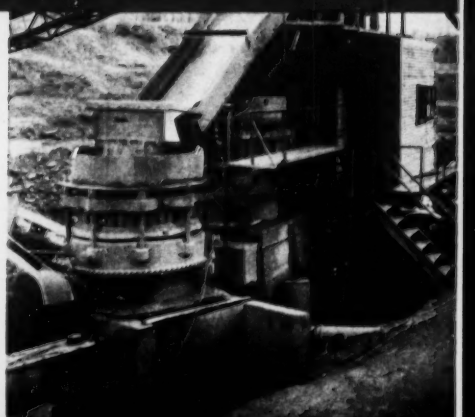

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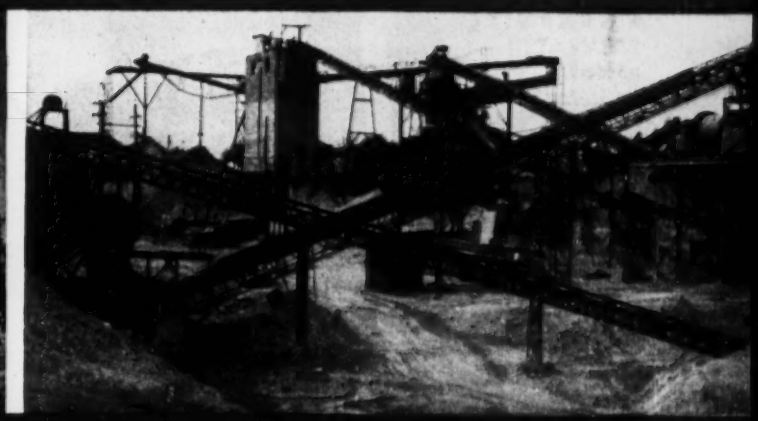

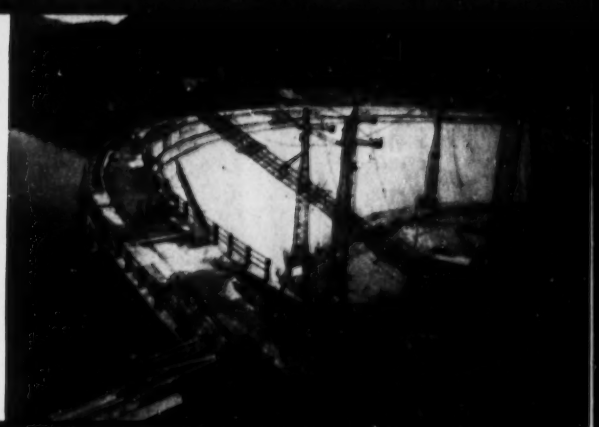

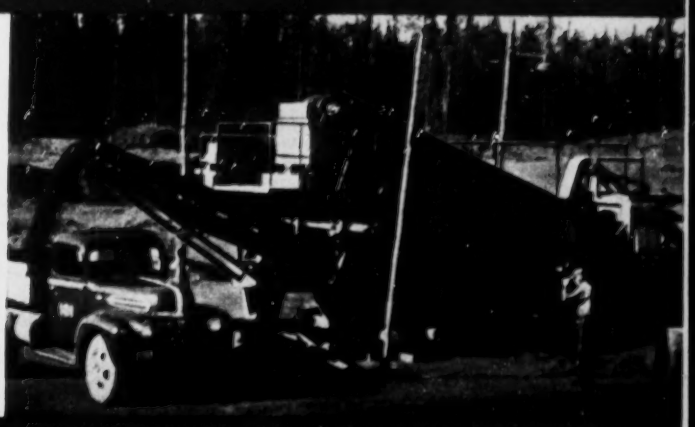

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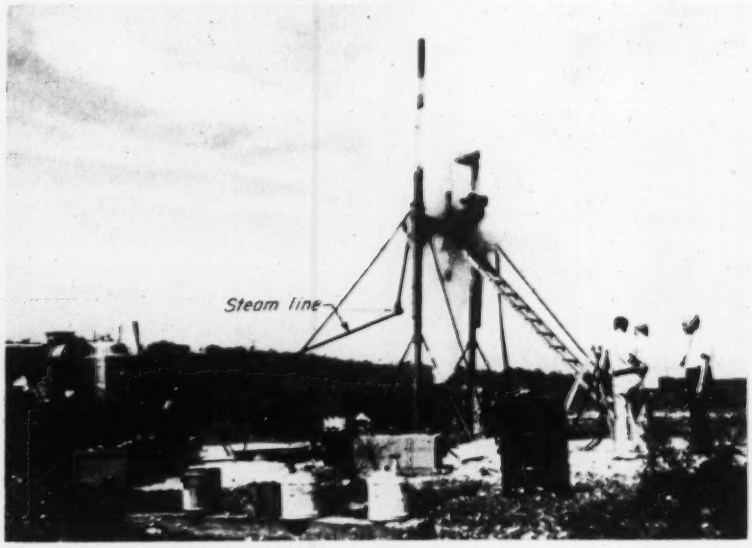
RESEARCH



DOUBLE-ACTING PERCUSSION DRILL—powered by high-pressure steam generator (at left) and operated from control panels (at right)—drills 4½-in. dia hole through 32-in. block of granite in 3½ min.

New rock drill principle tested

In a field test by the Institute of Inventive Research, San Antonio, Tex., a new type of rock drill made a 4½-in. hole through a 32-in. block of granite in 3 min. 35 sec.—or at the rate of 45 ft per hr.

The drill is of a percussion type operating similarly to a double-acting steam hammer and delivering 3,000 four-inch blows per minute at the butt. A solid-head rock bit with four tungsten carbide replaceable inserts is used at the business end of the drill. The bit has a center hole for exhausting steam from the drill and blowing out spoil from the hole.

In the Texas tests a Vapor-Clarkson steam generator supplied the rig with the necessary 2,400 lbs of steam an hour at a sustained pressure of 400 psi. A high pressure steam reservoir mounted on a trailer was used to smooth out the drilling operations.

Two air-cooled gasoline engines were used in the operation. One furnished hydraulic power to raise and lower the rig; the other—through a geared down arrangement—rotated the drill in the hole as the drilling proceeded.

The drill is less than 4 in. in dia and about five ft long, including the two pistons and cylinders, and can be carried by one man. In operation the drill follows the bit down into the hole and as the drilling proceeds, lengths of small diameter pipe are added to the top to supply steam.

The bit, which screws directly into the drill is operated at about 3,000 four-in. blows per minute. Oil is fed into the steam supply at a rate of one qt per hr to lubricate the drill.

SMALL DIAMETER enables drill to follow carbide-insert bit into hole. Overall length is five ft.

If ever a truck was designed with the driver in mind...

this new Ford Truck is it! New "DRIVERIZED" Cab cuts driver fatigue. New easy handling saves work and time getting around in tight spots. These and many other TIME-SAVING features in the all-new Ford Trucks help get jobs done fast.

Time is money! Today's truck owners know it. Ford Truck engineers know it. That's why TIME-SAVING was a major goal in designing the completely new Ford Trucks for 1953. With scores of new TIME-SAVING features, the new Ford Trucks are made-to-order for your work.

New "DRIVERIZED" Cabs provide living room comfort, cut driver fatigue. They help save time by making driving easier and more efficient in many ways:

Better visibility for instance. Although the new curved one-piece windshield is the most obvious improvement, bigger windows at the sides plus a 4-ft.-wide window at the rear, offer an amazing increase in all-around visibility.

The new Ford Truck seat is something special. Wider, of course. Non-sag seat springs. Adjustable seat cushion *and* separate adjustable back-rest. Most interesting new Ford exclusive feature is that every seat now has a built-in *shock snubber* to help level out the ride.

For easier maneuvering in tight quarters, or in loading and unloading, turning diameter has been considerably reduced. This was done by "setting back" the front axle, widening the front tread, and by improving the steering geometry.

NEW "DRIVERIZED" CABS cut driver fatigue. Both Standard and Deluxe Cab (shown) have new curved one-piece windshield, 55% bigger; new wider adjustable seat; new seat *shock snubber*; new push-button door handles.

New F-900 BIG JOB has G.V.W. rating of 27,000 lbs. for extra heavy hauling work. LOW FRICTION 155-h.p. *Cargo King V-8* offers high sustained torque to give you more performance flexibility for your heaviest loads.

Synchro-Silent type transmissions are now standard on all of the new truck models and at no extra cost. This means faster shifting without double clutching and less truck momentum lost.

New LOW-FRICTION design reduces piston travel, cuts down friction "power waste." You get more useable power...*on regular gas*. The 145-h.p. overhead-valve Cargo King V-8 has more power per cubic inch than any engine in its class. The 155-h.p. overhead-valve Cargo King V-8 is the most powerful Ford Truck engine ever built.

And only Ford gives you a choice of V-8 or Six in five different engines.

New Ford service accessibility saves time in the shop. Front ends have been redesigned. Hoods are wider. Frames are wider, too, permitting a new fender contour that makes engines much easier to get at.

Over 190 models in a greatly expanded line give you many more Ford Trucks to choose from in order to get the one *right* truck for *your* job.

FOR COMPLETE INFORMATION on all or any of the new Ford Trucks, write: FORD Division of FORD MOTOR COMPANY, P.O. Box 658, Dearborn, Michigan. State your work and what type of truck interests you most.

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BOOKS

Design of foundations

FOUNDATION ENGINEERING—By Ralph B. Peck, Walter E. Hanson and Thomas H. Thornburn, 410 pp. John Wiley & Sons, 440 Fourth Ave., New York 16, N. Y. $6.75.

The purpose of this book is to give engineering students a balanced understanding of the place of both science and practical experience in the design of foundations. In their foreword the authors note with concern a trend in engineering schools toward complete replacement of training in foundation engineering with training in soil mechanics. As they believe that many foundation problems are not susceptible of direct scientific solution, they have written a textbook that gives the essentials of soil mechanics and then goes on to show the student how those scientific principles are applied to each of the major types of foundation in the light of past experience in building such foundations.

Ralph B. Peck, the senior author, was associated with Karl Terzaghi in writing "Soil Mechanics in Engineer Practice," from which much information was drawn. The present book is less comprehensive in scope as it is limited to foundation work.

MANUAL OF PHOTOGRAMMETRY—Second Edition. 876 pp. American Society of Photogrammetry, Box 286, Benjamin Franklin Station, Washington, D. C. $12.50 to non-members.

While this volume is called "Second Edition," it contains about 80 percent new material—partly because the original edition was rushed to completion in 1944 to aid the war effort.

Twenty experts in as many departments of photogrammetry have written the chapters, which together comprise a handbook that an advanced student or practitioner of photogrammetry will find useful in his work. Engineers and contractors who might employ photogrammetrists will find adequate coverage of the subject in less-detailed textbooks.

This book contains references to the important applications of photogrammetry as currently used in the United States. It also brings together current American practices for construction of maps, including large-scale engineering-type plans, standard topography quadrangles and small-scale reconnaissance and planning charts. A sampling of chapter titles includes: aerial cameras, plotting instruments, multiplex operation, and trimetrogon

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SCARS AND GOUGES from ordinary steel vibrator heads result in blemished concrete and costly repairs before forms can be reused.

RUBBER TIPPED VIBRATORS do not mar forms any more than ordinary pencil eraser. Result is smoother finish and much longer form life.

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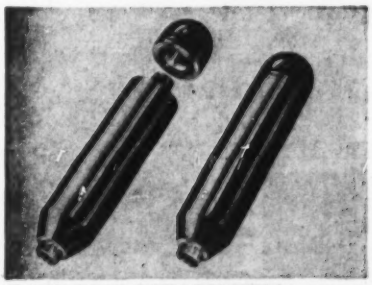
Viber's replaceable rubber tips will not gouge plywood or other expensive form materials (which can cut cleanup time up to 100%).

To cut costs progressive contractors plan their jobs for repeated use of costly plywood or other formwork. Accidental contact by ordinary steel vibrator heads can damage these forms so they must be patched or even scrapped. A damaged form also makes an imperfect finished surface, requiring expensive hand rubbing if appearance is at all important to the job.

Viber's replaceable rubber tip prevents such damage and extends indefinitely the life of these expensive forms. Made of high grade rubber tougher than the best truck tires, it will not damage any of the common form materials, including plaster of paris inserts for architectural concrete. This means important savings for the user through longer form life and less cleanup time.

These replaceable rubber tips are an exclusive patented development of VIBER COMPANY, another example of the progressive design and planning that keep VIBER a leader in the field of vibration. For information on VIBER'S complete line of internal and external vibrators, write your authorized dealer or VIBER COMPANY, 726 So. Flower Street, Burbank, California. Dept. 53



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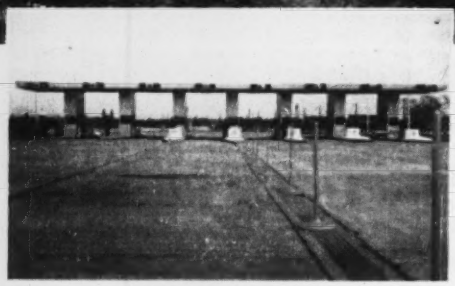

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reconnaissance mapping. A chapter on education presents outlines for university courses in photogrammetry.

Miscellaneous notes

• **Trailer courts** are the subject of a report issued by the Housing and Home Finance Agency under the title "Recommended Standards for Trailer Courts" (Superintendent of Documents, Washington 25, D. C., 15¢).

All principal aspects of the use of trailer courts, either for emergency housing or for the more or less permanent accommodation of trailers in resort cities, are covered in this government report.

Recommendations cover such phases of trailer courts problems, including location, topography, availability of utilities, site planning, trailer coach space sizes, width of roads and parking areas, service buildings, laundry drying facilities, refuse collection, recreation areas, water supply, fire protection, plumbing, and sanitary sewers.

The standards which have public-health implications were prepared in collaboration with, and largely by, the U. S. Public Health Service. They summarize the technical provisions of a manual now in preparation containing suggested ordinances and regulations on trailer court sanitation. The summary of PHS proposals in the HHFA publication will enable builders, for whom the pamphlet is primarily intended, to become informed on the public health factors that are involved in the development of trailer courts.

• **Tests** demonstrating the improvement in beam strengths produced by provisions for composite action have been carried out at the Engineering Experiment Station of the University of Illinois, in cooperation with the Illinois Division of Highways and the Bureau of Public Roads. The results are published in Bulletin Series No. 405, "Full-Scale Tests of Channel Shear Connectors and Composite T-Beams", which is Part II of "Studies of Slab and Beam Highway Bridges." Among the conclusions reached are: Channel shear connectors welded to the top flange of I-beams are reliable shear connectors. The wider the channel the more shear it carries, but the effect of its height is negligible. Increasing the web thickness is not as effective as increasing the flange thickness of the channel. The lightest rolled steel channels are probably the most economical. This 155-page report can be obtained for $1 from the university, at Urbana, Ill.

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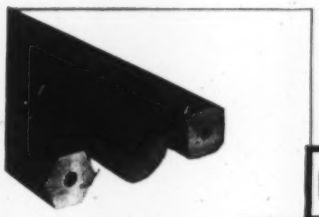

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BIDS ASKED—BUILDINGS

Conn., Bridgeport—SCHOOL—B.A. 6/24—City, Bd. Educ., 804 Main St., Samuel Johnson Elementary School, Chopsey Hill Rd., north of Trumbull Rd., $800,000. Plans deposit $75, Toby Vece, 9 Roger Williams Rd., archt. CD 1/30.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Albert A. Lutz Co., Inc.**, 241 W. 17 St., New York, N. Y. LB. **$3,765,959**. est. $5,000,000. double cantilever maintenance hangar, Limestone Air Force Base, Eng. 19-016-53-103, LIMESTONE, ME. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids May 28. CD 5/5.

† **S. & A. Allen Constr. Co., Inc.**, 9 Newbury St., Boston, Mass. LB **$994,408**, est. $1,000,000. electronic and electric shop expansion, Naval Shipyard, Spec. 34827, CHARLESTOWN, MASS. First Naval Dist., 495 Summer St., Boston, Mass. Bids May 26.

BUILDINGS

LOW BIDS AND CONTRACTS

MacMillan Co., Inc., 17 Main St., Keene, N. H., CA. **$715,784**, est. $650,000. HOSPITAL, BELLOWS FALLS, VT., Rockingham Hospital Assoc., Supts. Office, Westminster Terrace, Bellows Falls, Vt. Bids May 5. CD 5/11, under LB.

C. J. Maney Co., 173 Bedford St., Lexington, Mass. CA est. **$860,000**. superstructure for refrigerated WAREHOUSE, branch house, mfg. plant, Southampton St., BOSTON, MASS. Armour & Co., (Chamberlain & Co., subsidiary), Union Stock Yards, Chicago, Ill. Bids May 1. CD 4/28.

Vappi & Co., Inc., 240 Sidney St., Cambridge, Mass. CA est. **$550,000**. research LABORATORY, CAMBRIDGE, MASS. Cabot-Cabot & Forbes, 60 State St., Boston, Mass. Granger & Meyer, 161 Devonshire St., Boston, Mass., consult. engrs. Arthur D. Little Co., 30 Memorial Dr., Cambridge, Mass., lessee.

▲ **Edward R. Marden Corp.**, 233 Harvard St., Brookline, Mass. CA **$1,515,921**, est. $1,500,000. Senior High SCHOOL, addn., alterations, Webster St., NEEDHAM, MASS. Town Supt. Schools, 1330 Highland Ave., Needham, Mass. CD 5/19, under LB.

▲ **Giordano Constr. Co.**, 287 Main St., Branford, Conn., CA. **$1,371,200**. 124-unit MP-52 Moderate rental HOUSING, off Chamberlain Heights, MERIDEN, CONN. Meriden Housing Auth., 7 Gale Terrace, Meriden, Conn. Bids May 5. CD 5/11, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

Pa., Ellwood City—B.A. 6/22—At office Boro. Mgr., Ellwood City, sewage treatment plant addns. and siphon and trunk sewer; Contr. 3, general constr.; Contr. 4, electrical work; Contr. 5, siphon; Contr. 6, trunk sewer. Plans deposit $15. The Chester Engineers, 210 East Park Way, Pittsburgh Zone 12, engrs. CD 4/22.

† **N. Y., Youngstown**—FACILITIES—B.A. 6/25—U. S. Eng., 80 Lafayette St., New York, Zone 13, rehabilitation of existing facilities, Phase I and II, Fort Niagara, Serial No. Eng-30-075-53-508. $650,000. Plans deposit $15.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

Binghamton Constr. Co. Inc., Marine Midland Bldg., Binghamton, N. Y., LB **$134,460**, est. $172,000. Hancock-Long Eddy, S.H. 8464, 5.45 mi. FARC. 53-42, Delaware Co.;

Arute Bros. Inc., 560 S. Main St., New Britain, Conn. LB **$3,320,468**, est. $4,205,000, Taconic State Pkwy. Sect. 7, Pt. 3; Sect. 8; Sect. 9A, Pts. 1 and 2; and Sect. 9B, Pt. 1, 3.64 mi. Acc., ×2.29 mi. Pky., TSP. 53-1P, Columbia and Dutchess Counties;

Peckham Road Corp., 50 Harlem Ave., White Plains, N. Y., LB **$150,117**, est. $204,000, Bell Pond-Claverack, S.H. 1919, 3.8 mi. FARC. 53-45, Columbia Co.; LB **$248,710**, est. $176,000, Cobbleskill-Sharon Springs, Pt. 2, SH 1467, 5.21 mi. FARC. 53-41, Schoharie Co.;

The Talarico Contg. Corp. & Baron Constr. Co. Inc., 105 Fifth Ave., Herkimer, N. Y., LB **$347,035**, est. $421,000, Smyrna-Sherburne Pt. 2, SH 9097, 0.81 mi. FARC. 53-44, Chenango Co.;

cancelled bids to have been opened May 28, Collamer, S.H. 348, Syracuse-Bridgeport Pa. 1, SH. 672, 1.9 mi., FARC. 53-43, Onondaga Co. est. $500,000 CD 5/6.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

Slattery Rock Corp., 46-36 54th Rd., Long Island City, N. Y., LB **$3,541,581**, Major Deegan Expressway, Cont. 4, 1.31 mi. FA. MDE. 53-4. Bronx Co.;

H. T. Osburn & Co., Franklin, Pa., LB **$855,555**, channel rectification, Allegheny River and tributaries, Potter Co., PENNSYLVANIA. State Dpt. Forests & Waters, 405 Education Bldg., Harrisburg, Pa. Bids May 27. CD 5/20.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore,

Empire Constr. Co., 31 S. Calvert St., Baltimore, Md. CA **$1,125,065**. Bridge to carry Annapolis By-Pass over Dorsey Creek concrete substructure, and superstructure, Contr. AA 263-19-515, Anne Arundel Co. CD 5/19, under LB.

▲† **U. S. Eng.**, 24 St. and Maryland Ave., Baltimore, Md. rejected bids May 17, airfield imprvs., Phillips Field, ABERDEEN PROVING GROUND, MD. Project abandoned. LB **$2,384,885**. CD 3/23, under LB.

▲ **DeLuca-Davis Constr. Co.**, 1968 Belair Rd., Baltimore, Md., LB **$1,239,155**. Monroe Street Viaduct concrete, steel earth fill, BALTIMORE, MD. City, Bureau Hys., 303 Municipal Bldg., Baltimore, Md. Bids May 27. CD 5/13.

BUILDINGS

LOW BIDS AND CONTRACTS

Durham Estates, c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. **$700,000**. 53 HOUSES on tract at North Jerusalem and Durham Rds., EAST MEADOW, N. Y.

▲ **Bonnie Meadows Homes**, c/o Joseph Kaprow, archt., 277 North Ave., New Rochelle, N. Y. Owner Builds. **$1,000,000**. 44 HOUSES, 18-acre tract, Wilmot Rd. and Grand Blvd., NEW ROCHELLE, N. Y.

Herman Emelock & Irving Rosen, c/o J. Lubroth & Son, archts., 66 Court St., Brooklyn 2, N. Y. Owner Builds. **$300,000**. 4 story OFFICE and SHOWROOM, 241 Fifth Ave., NEW YORK, N. Y.

Southwick Park Homes, c/o Peter H. Butler, archt., 172 State St., West Englewood, N. J. Owner Builds. **$600,000**, 10 HOUSES on tract at Palisade Ave. and Lane Drive, ENGLEWOOD, N. J.

▲† **John Tester & Sons, Inc.**, 1620 Second St. S.W., Wash., D. C. CA **$2,427,227**. N.S.A. Constr. Proj. BARRACKS, utilities, FORT GEORGE G. MEADE, MD. U. S. Eng., 24 St. and Maryland Ave., Baltimore, Md. CD 5/5, under LB.

P. F. DuLaney, 216 C St. N.W., Wash., D. C. CA **$559,355**, est. $500,000. Glen Ridge Junior High SCHOOL, Landover Hills, UPPER MARLBORO, MD. Prince Georges Co. Bd. Educ., Upper Marlboro, Md. Bids Apr. 29, awarded May 22. CD 5/5 under LB.

Southern Engineering Corp., 1005 Bonifant St., Silver Spring, Md. Owner Builds, est. **$714,000**. 102 brick RAMBLERS, Wheaton Hills Sect. IV, WHEATON, MD. Leon Brown, 15 and Vermont Ave. N.W., Wash., D. C., archt.

SOUTH

BIDS ASKED—BUILDINGS

▲ **S. C. Anderson**—BAKERY—B.A. 6/23—American Bakeries Co., 10 Pryor St. Bldg., Atlanta, Ga., bakery. $1,000,000. Plans deposit $30. Stevens & Wilkinson, 157 Luckie St., N.W., Atlanta, archts. CD 1/16.

S. C., Charleston—SCHOOL—B.A. 6/24—City Bd. School Comrs., 14 St. Philip St., Negro Elementary School. $600,000. Plans deposit $50. Simons & Lapham, 17 Broad St., archts. CD 1/26.

SOON LETS CONTRACT—BUILDINGS

▲ **Ala., Calera**—PLANT—American Brake Shoe Co., 230 Park Ave., New York, N. Y., soon lets contract plant. $1,000,000. Extended date. CD 5/19.

La., New Orleans—HALL OF PHILOSOPHY—Roman Catholic Church of Diocese of New Orleans, c/o Diboll-Kessel & Assoc., archts., 637 Pere Antoine Court, soon lets contract, Hall of Philosophy for Notre Dame Seminary Group. $800,000. CD 5/5.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Paul Smith Constr. Co.**, 310 N. Rome Ave., Tampa, Fla. CA. **$1,148,820**, yard work for heavy systems and installations buildings, Inv. 53-43, EGLIN AIR FORCE BASE, FLA. U. S. Eng., P.O. Box 1169, Mobile, 7, Ala. Bids May 19. CD 5/26, under LB.

Boh Bros. Constr. Co., 2400 Cypress St., New Orleans, La. LB. **$599,986**. concrete lined and covered canal in Paris Ave., NEW ORLEANS, LA. Sewerage & Water Bd., 526 Carondelet St., New Orleans, La. Bids May 26. CD 5/5.

† **Sam Finley, Inc.**, 292 North Ave. N.W., Atlanta, Ga., CA. **$569,800**, 32,000 sq. asphalt pavement on banks of Mississippi River, Inv. 53-129. TENNESSEE, ARKANSAS, MISSISSIPPI. U. S. Eng., P.O. Box 97, Memphis 1, Tenn. Bids May 13. CD 5/22, under LB.

Patterson & Holmes Constr. Co., 2707 Seventh Ave. S., Birmingham, Ala., LB. **$989,359**, install natural gas distr. sys., TRENTON, TENN. Gibson County Utility Dist., Trenton, Ten.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Cramer-Vollmerhausen**, 2601 Connecticut Ave., N.W., Wash., D. C., LB. **$3,347,000**, 3,600,000 cu. ft. Woodrow Wilson HIGH SCHOOL, PORTSMOUTH, VA. Portsmouth School Bd., City Hall, Portsmouth, Va. Bids May 22. CD 4/16.

▲ **Wise Contrg. Co.**, 8 and Grace Sts., Richmond, Va. CA. **$1,200,000**. department STORE, RICHMOND, VA. F. W. Woolworth Co., Woolworth Bldg., New York, N. Y. CD 3/6.

Kenhill Constr. Co., 307 Duffy St., Charleston, W. Va., CA. **$658,616**, general contract, Project 1, Nitro High SCHOOL, CHARLESTON, W. VA. Kanawha Co. Bd. Educ., Quarrier ad Elizabeth Sts., Charleston, W. Va. Bids May 20. CD 5/26, under LB.

▲ **John W. Harris Assocs., Inc.**, 30 Rockefeller Plaza, New York, N. Y., CA. Est. **$1,200,000**, general contract 2 story, brick, concrete HOTEL add. of auditorium, banquet hall, theatre, etc. WHITE SULPHUR SPRINGS, W. VA. C. & O. Railway Co., Greenbrier Hotel, White Sulphur Springs, W. Va. Small, Smith & Reeb, 1010 Euclid Ave., Cleveland, O., archts.

A. H. Guion & Co., Wilkinson Blvd., Charlotte, N. C., CA **$602,900**, East Buncombe HIGH SCHOOL, ASHEVILLE, N. C. Buncombe Co. Bd. Educ., Court House, Asheville, N. C. Bids May 5. CD 5/13, under LB.

L. P. Cox Co., P. O. Box 188, Sanford, N. C., CA **$687,947**, Senior HIGH SCHOOL, FAYETTEVILLE, N. C. City, Fayetteville, N. C. Bids May 13. CD 5/20, under LB.

▲ **John R. Taylor Co.**, 125½ W. Market St., Greensboro, N. C., Owner Builds. **$1,000,000** 125 RESIDENCES, GREENSBORO, N. C.

Ruscan Constr. Co., 149 E. Bay St., Charleston, S. C. CA. **$600,437**, HOSPITAL addn., CONWAY, S. C. Conway Hospital, Inc., Conway, S. C. Bids Mar. 25. CD 4/2, under LB.

Wollsman & Lord, Lakeland, Fla., Owner Builds, **$850,000**. 82 RESIDENCES, LAKELAND, FLA. A. Watson, 1529 Grand Central, Tampa, Fla., archt.

▲ **Daniel Constr. Co. of Alabama, Inc.**, P. O. Box 1511, Birmingham, Ala., CA. **$1,559,580**. White HIGH SCHOOL, TUSCALOOSA, ALA. City, City Hall, Tuscaloosa, Ala. Bids May 26, awarded May 28. CD 5/20.

G. E. Bass & Co., P. O. Box 1033, Jackson, Miss. LB **$554,339**. general contract, engineering bldg. and CONTINUATION CENTER, for University of Mississippi, UNIVERSITY, MISS. State Bldg. Comn., Woolfolk State Office Bldg., Jackson, Miss. Bids May 26. CD 5/12.

▲ **G. E. Bass & Co.**, P. O. Box 1033, Jackson, Miss. LB **$1,294,033**. HOUSING Proj. LA 6-5, MONROE, LA. Monroe Housing Auth., Monroe, La. Bids May 27. CD 4/28.

Horace B. Rickey Inc., P. O. Box 218, Lafayette, La. LB **$626,545**. 75 HOUSING units, MORGAN CITY, LA. Morgan City Housing Auth., Morgan City, La. Bids May 25. CD 5/1.

▲ **R. P. Farnsworth & Co.**, 1515 S. Salcedo St., New Orleans, La. LB **$1,395,800**. 2 story, rein-con., Uptown Junior High SCHOOL, NEW ORLEANS, LA. Orleans Parish School Bd., 703 Carondelet St., New Orleans, La. Bids May 26. CD 4/29.

▲ **Anthony Erpenbeck** St. Anthony Circle, Covington, Ky. Owner Builds. **$3,000,000**. two-hundred 1½ story, brick, bsmt., DWELLINGS, Swan Circle off Dixie Hy., ELMSMERE, KY. Noel Walton, c/o owner. Awarded May 25.

▲† **Tennessee and Alabama**—Tennessee Valley Auth., New Sprankle Bldg., Knoxville, Tenn. awarded contracts for Shawnee Steam Plant, Tenn., Colbert Steam Plant, Ala., John Sevier Steam Plant, Tenn., Gallatin Steam Plant, Tenn., Kingston Steam Plant, Tenn., Widows Creek Steam Plant, Ala., Hiwassee Dam, Tenn., and miscellaneous. Grand total **$7,257,657**.

SHAWNEE STEAM PLANT, TENN.

Babcock & Wilcox Co., Sterling Ave., Barberton, O., CA **$61,600**, unloading boiler equip;

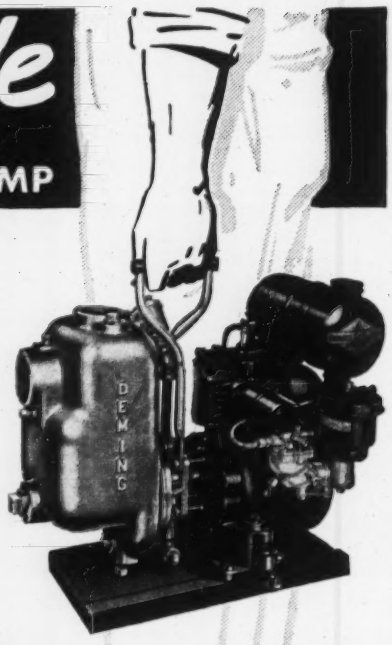
Reynolds Metals Co., Listerhill, Ala., CA **$93,019**, conductor cable;

COLBERT STEAM PLANT, ALA.

Phelps Dodge Copper Products Corp., foot of Point St. Yonkers, N. Y., CA **$6,705**, insulated conductor;

Garland Sherman, 2418 E. 14 St., Chattanooga, Tenn. CA. **$493,019**, installing masonry materials and accessories;

Portable
SELF-PRIMING CENTRIFUGAL PUMP



One man can carry a Deming Fig. 3304 Self-Priming Centrifugal Pump. Compact size is only 20" x 13" x 19". Many applications for drainage and water-handling service.

Pump is bronze fitted, all-iron, or all-bronze construction. Impeller mounted directly on engine shaft. Double rotary seals. Both suction and discharge are 1½". Capacity 10 G.P.M. at 80 ft. head, to 90 G.P.M. at 15 ft. head.

Unit is powered by a Briggs & Stratton Model 1½ H.P., 4-cycle, air-cooled gasoline engine having a high tension magneto. Net weight of complete unit 84 lbs.

Write for Bulletin 3304

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THE DEMING COMPANY, 536 BROADWAY, SALEM, OHIO

REQUIRE
NO CURRENT
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INDOOR AND OUTDOOR MODELS
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For permanent installation on projects or temporary use on construction jobs. Insure positive communication at all times even in emergencies because no batteries or other current is required. Minimum upkeep. Selective or common ringing and semi-selective or common talking.
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761 THIRD AVENUE, BROOKLYN 32, N.Y.
TELEPHONE HYACINTH 9-1200

JOHN SEVIER STEAM PLANT, TENN.
Allen-Sherman-Hoff Co., Hamburg, Pa., CA $146,249, ash, pyrites and dust handling systems;
W. S. Rockwell Co., 200 Elliot St., Fairfield, Conn., CA $74,943, butterfly valves;
Mills & Lupton Supply Co., Pittsburgh, Pa., CA $85,682 steel conduit;
Custodis Constr. Co., 25 Broadway, New York, N. Y. CA $234,322, rein.-con. chimney;
General Electric Co., 1405 Locust St., Phila., Pa. CA $99,194, oil circuit breakers;
Reynolds Metals Co., Listerhill, Ala., CA $51,442, conductor;
GALLATIN STEAM PLANT, TENN.
Ingersoll-Rand Co., Phillipsburg, N. J., CA $294,056, condenser circulating water pumps;
Griscom-Russell Co., Massilon, O., CA $86,834, evaporators and evaporator preheaters; CA $608,646, feedwater heaters;
McDowell & McDowell, 699 Murfreesboro Rd., Nashville, Tenn., CA $249,582, grading, drainage for access railroad and access highway;
TAG Equipment Co., Manitowoc, Wis., CA. $77,245, crawler mounted shovels and attachments;
KINGSTON STEAM PLANT, TENN.
Lehigh Structural Steel Co., foot of Gordon St., Allentown, Pa., CA $83,103, galvanized structural steel;
National Valve & Mfg. Co., 3101 Liberty Ave., Pittsburgh, Pa., CA $4,000,000, principal piping systems;
Aluminum Structures, Inc., Canonsburg, Pa., CA $52,581, louvers and grills;
WIDOWS CREEK STEAM PLANT, ALA.
Babcock & Wilcox Co., Sterling Ave., Barberton, CA $99,109, pulverizer balls and rings;
HIWASSEE DAM, TENN.
Philips & Davies, Inc., Kenton, O., CA $75,000, intake gate;
MISCELLANEOUS
Reynolds Metals, Listerhill, Ala., CA $147,286, conductor cable;
Wagner Electric Co., 6400 Plymouth St., St. Louis, Mo., CA $138,040, transformers.

▲ South & Patton, First Natl. Bank Bldg., Memphis, Tenn., LB $4,422,244, construct, manage and finance, 500 HOUSING units, OAK RIDGE, TENN. Management Services, Inc., Oak Ridge, Tenn. Bids May 25. CD 5/4.

MIDDLE WEST

BIDS ASKED—BUILDINGS

Mich., Charlevoix—HOSPITAL—B.A. 6/24—Charlevoix Hospital, Fred Willis, pres., Bd. Directors, 2 story, brick, steel, concrete, masonry hospital, $600,000. Plans deposit $45 refundable. Gordon Cornwall, Anderson Bldg., archt. Stuart Long, East Bldg., Wealthy S.E., Grand Rapids, engr. CD 1/25/52.

▲ O., Cleveland—HIGH SCHOOL—B.A. 6/24—Bd. Educ., 1380 E. 6th St., Zone 14, Junior High School, rear of George Washington Elementary School, 16210 Lorain Ave. $1,000,000. Plans deposit $25. Arthur F. Baer, c/o owner, archt. CD 12/24.

▲ O., Toledo—HIGH SCHOOL—B.A. 6/30—Bd. Educ., Oregon Local School Dist., 5721 Seaman Rd., Zone 9, 2 story Clay High School, Seaman Rd. $1,600,000. Plans deposit $25. Bellman, Gillett & Richards, 518 Jefferson St., Zone 4, archt.-engrs. CD 11/11.

▲ Mich., Detroit—AUDITORIUM—B.A. 7/8—City, Frank G. Schemanske, pres., Memorial Hall Comm., Contr. MH 23-A2 superstructure, 192xw50 ft., rein.-con., steel, marble granite Henry & Edsel Ford Auditorium, Woodward, Jefferson and Randolph Sts., $2,500,000. Plans deposit $100 refundable. Crane, Kiehler & Kellogg, 112 Madison Ave., Detroit and O'Dell, Hewlett & Luckenbach, 950 Hunter Blvd., Birmingham, archts. CD 10/11/50.

HEAVY CONSTRUCTION
LOW BIDS AND CONTRACTS

▲ **Hagerman Constr. Corp.**, 403 Strauss Bldg., Fort Wayne, Ind., CA $2,506,151. est. $2,800,000, Three Rivers Filtration Plant addn., 151x6x83. 10 ft. Incl. chlorine storage bldg., softening bldg. addn., coagulation and settling tanks, control tanks, control bldg., filter bldg. addn., chlorine room equip. and accessories for four filter tanks, FORT WAYNE, IND. Bd. P. Wks., City Hall, Fort Wayne, Ind. Bids May 21, awarded May 26. CD 5/27 under LB.

BUILDINGS
LOW BIDS AND CONTRACTS

▲ **Ohio Homes, Inc.**, 317 S. Reading Rd., Cincinnati, O. Owner Builds. $2,000,000. 200 one-family prefabricated bsmnt less DWELLINGS off Union Cemetery Rd. west of Loveland, CINCINNATI, O. National Homes Corp., Lafayette, Ind., archt. Awarded May 28.

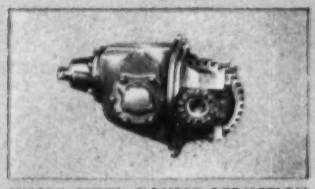
▲ **Dean W. Rankin, Inc.**, 1836 Euclid Ave., Cleveland, O. CA Approx. $3,000,000. 1 story 300,000 sq. ft. brick, concrete FACTORY, at 4444 Lee R., CLEVELAND, O. Cleveland Cap Screw Co., 2917 E. 79 St., Cleveland, O. H. M. Morse & Co., 3334 Prospect Ave., Cleveland, O. archt. CD 5/6/52.

▲† **General Electric Corp.**, River Rd., Schenectady, N. Y., CA $3,161,666, misc. equip. for switchyard;
Westinghouse Electric Corp., 207 W. 3 St., Cincinnati, O., CA $57,400, switchyard material, $49,921, electrical material, $9,320, other;
Biggs Boiler Works Co., 1007 Bank St., Akron, O., CA $203,635, heating equip.;
Mt. Vernon Bridge Co., Mt. Vernon, O., CA $32,500, structural steel, for GASEOUS DIFFUSION PLANT (Subcontractors under Peter Kiewit Sons' Co., P. O. Box 268, Portsmouth, O.) for Atomic Energy Comn., 1901 Constitution Ave. N. W., Wash. 25, D. C. PIKETON and WAKEFIELD, O. CD 8/13/52, under CA.

"3 FOR 1" AXLES

gear each truck to its specific job!

SINGLE-REDUCTION HYPOID FINAL DRIVES are designed for use with modern, high-output truck engines. Hypoid offers the slower gear ratios necessary for high-speed engines—increases durability and service life.



SINGLE-SPEED DOUBLE-REDUCTION FINAL DRIVES are especially adaptable for tough jobs. They combine Hypoid gearing in the first reduction with helical-spur gearing in the second. Performance and durability under rugged conditions are prime advantages.

TWO-SPEED DOUBLE-REDUCTION FINAL DRIVES offer the advantage of both speed and pulling power for on- and off-highway operation. Any speed, load or road condition can be met in a split second with the TDA Spring-Flex Power Shift.

All Three Types of Final Drives Are Interchangeable in the Same Axle Housing Using the Same Axle Shaft

The trucking industry today needs a variety of trucks, each equipped to do a specific job! And that means trucks engineered right down to the axle—with exactly the *right* type of final drive to do the job required.

Most TDA axles allow the trucker to choose the final drive he needs to meet his specific requirements. For instance, in the TDA "3 for 1" family, he can specify a single-speed final drive, a double-reduction final drive or a two-speed double-reduction final drive for each axle capacity. All are interchangeable in the same axle housing, using the same axle shaft. What's more, there is a wide range of gear ratios in each final drive. There is no need to compromise when choosing axles.

Only TDA offers all three types of final drives with rugged Hypoid gearing—proved by billions of ton-miles of actual operation. Take advantage of these exclusive features the next time you buy trucks. Specify TDA Axles and Brakes.

WORLD'S LARGEST MANUFACTURER OF AXLES FOR TRUCKS, BUSES AND TRAILERS

The Accepted Standard

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THE TIMKEN-DETROIT AXLE COMPANY
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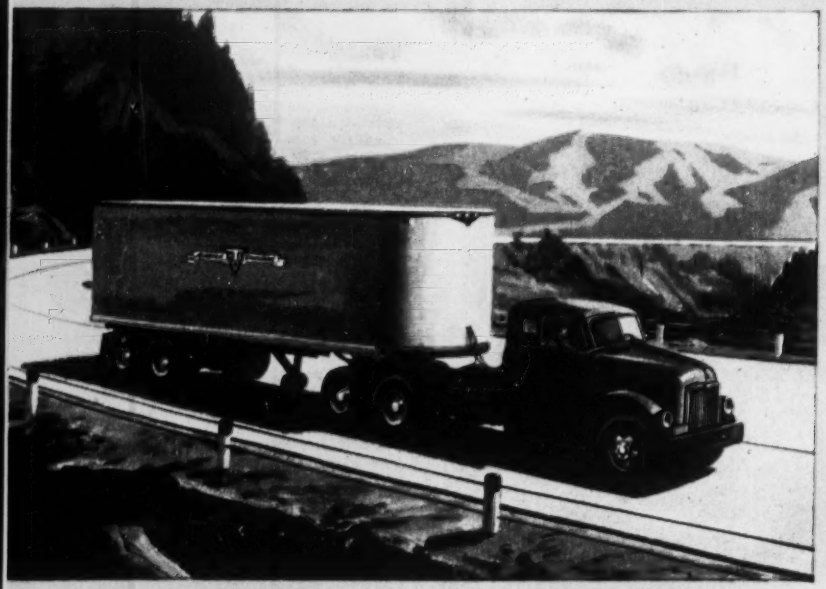
TANDEM-DRIVE UNITS

... carry MORE payload!



Distribution of load allows more payload within legal weight limitations!

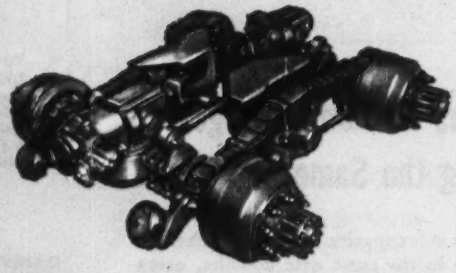
Many truckers are carrying *more* payload —yet keeping within weight restrictions —by using six-wheel tractor-trailer combinations or six-wheel trucks equipped with tandem-drive rear axle units. That's because weight is distributed between *two* rear axles instead of one. Tandem-drive units offer truckers many other important advantages, too. For instance, the *two* driving axles make it possible to use engines of maximum horsepower, thereby decreasing run time from terminal to terminal.

TDA has long recognized the advantages of tandem-drive axle units for use in highway hauling. In fact, the new TDA "SLD and SLDD Series" Tandem-Drive Units are specifically designed for highway service. Used with 10.00 x 20 tires, they are lighter in weight than other tandem-drive units of comparable capacity. What's more, the optional inter-axle differential can be engaged or disengaged from a cab control, assuring maximum traction regardless of road conditions.

The next time you buy trucks, investigate six-wheelers. And make sure they have TDA Tandem-Drive Rear Axle Units!

New lighter weight unit is available with or without inter-axle differential

The new TDA "SLD and SLDD Series" Tandem-Drive Axle Unit has a positive through-drive. Because the final drives are top-mounted, the unit provides an ideal hook-up for short-wheelbase tractors. Inter-axle differential is optional.



Forged steel housing is lighter—yet stronger—than ever

Much of the weight reduction in the new TDA "SLD and SLDD Series" unit is obtained in the housing. It is hot-forged of dense, compacted steel with rectangular corners for maximum rigidity. Heavy steel cover is welded in place.

The Accepted TDA Standard

AXLES

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Adolph Johnson & Son Co., 661 Wick Ave., Youngstown, O., LB, **$616,235**, general constr., East HIGH SCHOOL addn., YOUNGSTOWN, O. Bd. Educ., 20 W. Wood St., Youngstown, O. Bids May 22. CD 4/29.

Banner Realty Co., Danville, Ind. Owner Builds. **$600,000.** 40 HOMES in Western Heights, DANVILLE, IND.

Indianapolis Homes, Inc., 1300 N. Irvington Ave., Indianapolis, Ind. Owner Builds. **$500,000.** HOMES in Eastridge addn. INDIANAPOLIS, IND.

▲ **Kazis Karazi Jr.**, 2405 W. 51 St., Chicago, Ill., LB, **$1,000,000**, CHURCH, CHICAGO, ILL. Church of the Nativity of The Blessed Virgin Mary, 6825 W. Washtenaw Ave., Chicago, Ill. CD 10/1.

T. S. Willis Co., 326 Hayes Block, Janesville, Wis. LB **$504,885.** 3 and 4 story 146x148 ft. Y.M.C.A. BUILDING, WAUKESHA, WIS. Young Men's Christian Assn., 239 South St., Waukesha, Wis. Bids May 25. CD 5/12.

▲ **Frontier Building Co.**, 19320 James Couzens Dr., Detroit, Mich. Owner Builds, est. **$1,000,000.** 100 single HOUSES, Middlebelt in Cherry Hill Sect., GARDEN CITY, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—BUILDINGS

▲ **Tex., Houston**—SHOPPING CENTER—Bids Asked—H. R. Houck, Sr., 3780 Grammercy St., 100,000 sq. ft. brick shopping center, $1,000,000. Jos. B. Reynolds, 2480 Times Blvd., archt. CD 5/27.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Henry J. Kaiser Co.**, 1924 Broadway, Oakland, Calif., B. Perini & Sons, 73 Montwait Ave., Framingham, Mass., and Walsh Constr. Co., 122 E. 42 St., New York, N. Y., CA. **$10,349,256**, powerhouse and switchyard at Garrison Dam and Reservoir Proj., Riverdale, Inv. 32-015-53-19, NORTH DAKOTA. U. S. Eng. Fort Lincoln, P.O. Box 300, Bismarck, N. D. Bids Apr. 30. CD 5/7, under LB.

▲ **NORTH DAKOTA**—State Hy. Dpt., Bismarck,

Haggart Constr. Co., 667 2nd Ave. N., Fargo, N. D., CA. **$127,937**, b. conc. 10.612 mi. Proj. No. F-27 (5) and F-157 (4), Benson Co.;

P. A. Bradbury Constr. Co., Aberdeen, S. D., CA **$411,543**, b. conc. 26.689 mi. Proj. No. FI-49 (5) and FI-307 (6), Golden Valley and Billings Counties; CA **$256,246**, b. conc. 20.293 mi. Proj. No. F 274 (15) and F-337 (8), McHenry and Pierce Counties;

Butler Constr. Co., 901 N. 6 St., Grand Forks, N. D., CA **$535,978**. b. conc. 42.543 mi. Proj. No. F-56 (17), F-151 (10), SAP-56. Stutsman and Foster Counties;

Wm. Collins & Sons, 514 Black Bldg., Fargo, N. D. CA **$137,795**, tr. serv. grav. 8.99 mi. Proj. No. F 152 (2), Nelson and Griggs Counties;

Northern Improvement Co., 633 1 st Ave. N., Fargo, N. D. CA **$133,485**, b. conc. 13.755 mi. Proj. No. F 251 (15), Morton Co.;

John Dieseth Co., Fergus Falls, Minn., CA **$160,508**, tr. service grav. 9.014 mi. Proj. No. F 370 (21), Cass and Richland Counties. Grand total **$1,763,492.** Bids May 22. CD 5/11.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Merritt-Chapman & Scott Corp.**, 260 Madison Ave., New York 16, N. Y. CA. Est. **$3,500,000.** chemical fertilizer PLANT, JOPLIN, MO. Missouri Farmers Assn., 201 S. 7 St., Columbia, Mo. Door Co., Barry Pl., Stamford, Conn., engr.-archt. CD 10/16.

Phoenix Development Co., 46 and Dodge Sts., Omaha, Neb. Owner Builds. **$500,000.** 47 addnl. HOMES, vicinity of Cullingham Underwood Addn., OMAHA, NEB.

George A. Jackson & Assoc., 1806 Main St., Dallas, Tex. Owner Builds. **$323,500.** 14 APARTMENT units; **$365,000**, 45 single family HOMES, DALLAS, TEX. CD 9/29/50.

Busboon & Rauh, Forest Park Rd., Dallas, Tex., CA. **$469,700**, 75 APARTMENT units, DALLAS, TEX. Jack Isaminger, Jr., 5603 Mockingbird Lane, Dallas, Tex. CD 12/3.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲† **California**—B.A. 7/30—Bureau Reclamation, Dpt. Interior, Tracy, Monticello Dam Solano Project on Putah Creek, Extended date; adv. ENR 6/11. CD 5/27.

BIDS ASKED—BUILDINGS

Calif., Fresno—HOSPITAL—B.A. 6/23—Fresno Co., Court House, tuberculosis hospital. Plans deposit $50. David H. Horn & Marshall D. Mortland, 1256 Fulton St., archts. CD 12/8/50.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **A. Teichert & Son, Inc.**, P. O. Box 397, Baldwin Park, Calif. LB **$1,671,991.** flood control work in Los Angeles County drainage area, CIVENG-53-38, CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. (Correction—Low Bidder). CD 5/14, under LB.

▲† **Pacific Oerlikon Co.**, 3001 N. Starr St., Tacoma, Wash., CA. **$1,997,822** furnishing, installing four 30,000 kva vertical-shaft generators for Palisades Power Plant, Palisades Proj. Spec. DC 3904, IDAHO. Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo. Bids Apr. 14. CD 4/21, under LB.

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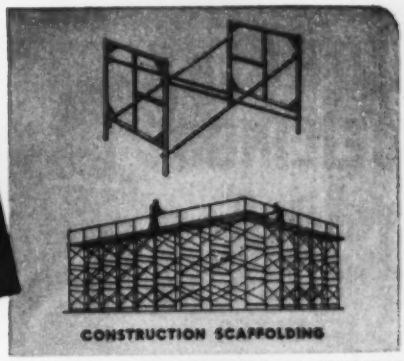

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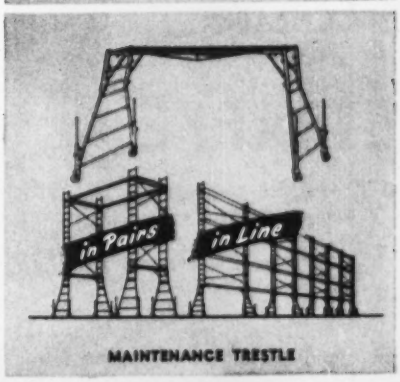

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We did, right from the **Barber-Greene** *REDI-FAB CATALOG*

The B-G Redi-Fab series meets the needs of 2 out of 3 permanent conveyor installations

see your B-G distributor or write

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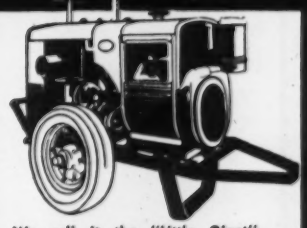
AURORA, ILLINOIS, U. S. A.

THIS "COMPLETE" **WELLPOINT PUMP** *more efficient, more economical, than more costly units*



We call it the "Little Giant". Contractors call it a great big boon in a compact package. This little unit, with 6" suction and discharge, handles up to 1200 gpm — may be used for open sump work, for well-pointing and for jetting "Complete" wellpoints (if you're wise) into the ground. Its 1695 pounds are mounted in a 2-wheel chassis that is easily towed behind any vehicle. Sold at a surprisingly reasonable price; Rented if you prefer it that way. Particulars are free. Write today.

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DO IT
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PRESSURE TREATMENT PAYS

● Wood exposed to moisture and air at normal temperatures *always* faces the hazard of decay—unless treated. Since a pressure treatment, selected according to the proposed use, multiplies wood service life many times, it's highly profitable. Write for Bulletin SW4 on pressure treatment.

KOPPERS

KOPPERS COMPANY, INC.
Wood Preserving Division
Pittsburgh 19, Pa.

† **Peter Kiewit Sons' Co.**, 345 Kieways St., Azusa, Calif. CA **$964,844.** imprv. Los Angeles River from Seventh St. to Pacific Ocean River Mile 0.82 to 0.09, Long Beach, Los Angeles Co., CIVENG-04-353-53-40, CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids May 21, awarded May 25. CD 5/27, under LB.

▲ **CALIFORNIA**—State Div. Hys., P. Wks. Bldg., Sacramento.

Chas. L. Harney Inc., 575 Berry St., San Francisco, Calif. CA **$2,165,364.** 1.7 mi. grading, paving, bridges, etc. Bayshore Freeway between Hester Ave. and Alemany Blvd., San Francisco Co. Bids May 13, awarded May 26. CD 5/21, under LB.

▲† **English Electric Export and Trading Co. Ltd.**, 233 Beaver St., New York, 4, N. Y., LB **$1,761,317.** ten 103,300-kva transformers for Chief Joseph Dam. Inv. 53-67, Bridgeport, WASHINGTON. U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids May 27. CD 5/6.

▲ **WASHINGTON**—State Hy. Comn., Olympia Associated **Sand & Gravel Co.**, Everett and **Western Asphalt Co.**, 309 W. 39 St., Seattle, Wash., CA, **$613,312** b. conc. paving 12.43 mi. Hy. 1, Richmond Heights to Broadway cutoff, King and Snohomish Counties;

N. Fiorito Co., 844 W. 48 St., Seattle, Wash., CA, **$819,913**, clearing, draining, grading, paving 2 rein.-con. slab bridges 4.29 2 Mi. Hy. 2, Middle Crossing of Snoqualmie River at Telford, King Co. Bids May 26. CD 6/1, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Shaw Constr. Co.**, 8625½ Firestone Blvd., Downey, Calif. CA **$1,209,600.** 112 frame stucco DWELLINGS, BELLFLOWER, CALIF. Sterling Properties, 8625½ Firestone Blvd., Downey, Calif.

▲ **F. E. Young Constr. Co.**, 2141 Main St., San Diego, Calif. LB **$1,081,000.** 1 story, masonry high SCHOOL incl. 6 bldgs., ESCONDIDO, CALIF. Escondido Union High School Dist., Escondido, Calif. Bids May 26. CD 5/15.

† **Stolte Inc.**, Cassanova Ave., Monterey, Calif. CA **$911,454.** 18 classroom BUILDINGS, Eng.-04-203-53-1256, FORT ORD, CALIF. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. CD 4/3, under LB.

Mountain View Terrace Homes, Inc., Box 217, Garden Grove, Calif. Owner Builds. Est. **$610,000.** 50 stucco DWELLINGS, in Tract 1641, GARDEN GROVE, CALIF.

Tietz Constr. Co., 11852 Brookhurst St., Garden Grove, Calif. Owner Builds. **$530,250.** 50 stucco DWELLINGS in Tract 1729, GARDEN GROVE, CALIF.

R. E. Payne, 327 E. Florence Ave., Inglewood, Calif. CA **$404,000.** 2 story, brick, concrete 22,000 sq. ft. OFFICE, INGLEWOOD, CALIF. Inglewood Federal Savings & Loan Assoc., 170 N. La Brea St., Inglewood, Calif. Francis J. Hensel, 730 E. Third St., Long Beach, Calif., archt.

▲ **Bethlehem Steel Co.**, General Motors Bldg., Detroit, Mich. CA structural steel for assembly PLANT, office, power plant;

Swinerton & Walberg and Cahill Bros., Inc. (joint) 1723 Webster St., Oakland, Calif. CA sewers and site preparations for plant, near MILPITAS, CALIF. Ford Motor Co., 3000 Schaefer St., Dearborn, Mich. Awarded May 20. CD 4/23.

▲ **John F. Tulloch Inc.**, 3428 Ettie St., Oakland, Calif. CA est. **$1,000,000.** truck assembly PLANT expansion, OAKLAND, CALIF. Chevrolet-Oakland Div., General Motors Corp., 10910 E. 14 St., Oakland, Calif.

Maino Constr. Co., 2238 Broad St., San Luis Obispo, Calif. CA **$543,660.** Junior High SCHOOL addns., SAN LUIS OBISPO, CALIF. San Luis Obispo High School Dist., San Louis Obispo, Calif. Awarded May 19. CD 4/29.

Nomellini Constr. Co., Box 1177, Stockton, Calif. CA **$459,675.** HOSPITAL wing, STOCKTON, CALIF. St. Joseph's Home & Hospital, N. California St., Stockton, Calif. Awarded May 19. CD 12/16.

Nomellini Constr. Co., P. O. Box 1177, Stockton, Calif. LB **$859,950.** receiving and treatment unit Stockton State HOSPITAL, STOCKTON, CALIF. State Div. Architecture, P. Wks. Bldg., Sacramento, Calif. CD 8/8/52.

CANADA

BIDS ASKED—BUILDINGS

Ont., **Ingersoll**—SCHOOL—B.A. 6/16—Ingersoll District Collegiate Institute Bd, J. J. McLeod, secy-treas. Ingersoll, 2 story, T-snaped, irregular dimensions, concrete, concrete block, rein.-con. frame, brick high school, $630,000. Plans deposit $25. Shore & Moffat, 79 Queen St. E., Toronto, archts. CD 4/26/49.

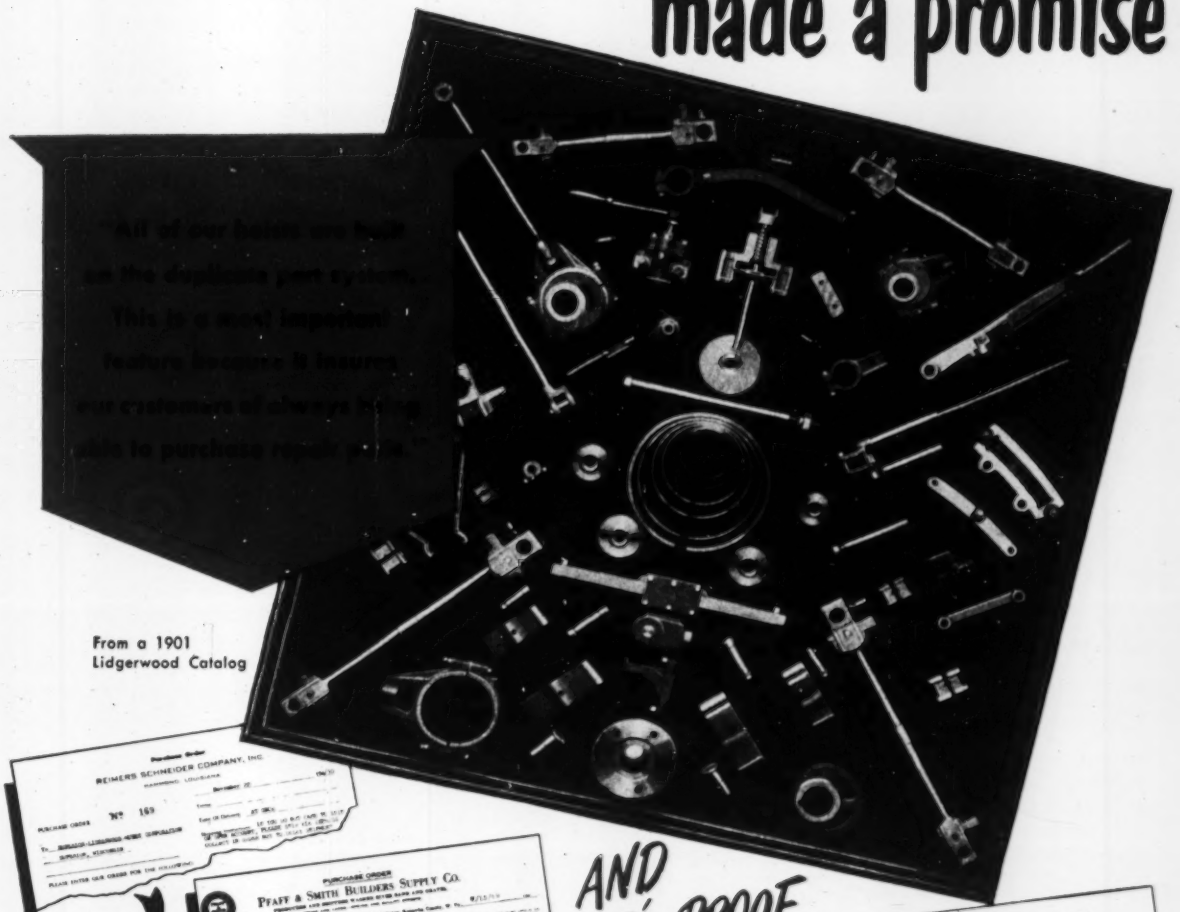
▲ Que., **Montreal**—WAREHOUSE, OFFICE—B.A. 6/16—Bell Telephone Co. of Canada, 1050 Beaver Hill Hall 1½ story, 225x700 ft., rein.-con., brick, warehouse and office, $2,500,000. P. Booth, 485 McGill St., engr. and T. Pringle & Son Ltd., 485 McGill St., both Montreal, archts. CD 3/31.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

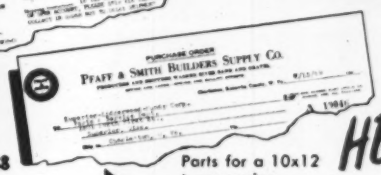
MANITOBA—Province of Manitoba, Winnipeg,
Stratton Eng. Co. Ltd., 14 Huron and Erie Bldg. Winnipeg, Man., CA, **$648,610**, hy. 14½ mi. East Braintree to Whitemouth River, East Braintree. Bids May 15. CD 5/14.

Over half a century ago Lidgerwood made a promise



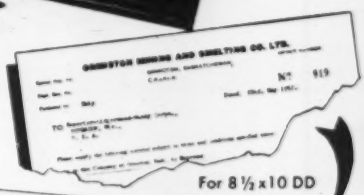
From a 1901
Lidgerwood Catalog

For 2 drum
Steam Hoist
#4472
—**SHIPPED 3/28/88**

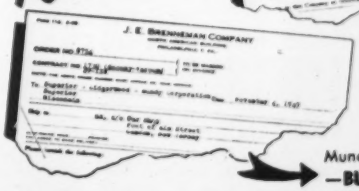


Parts for a 10x12
type engine
—**BUILT IN 1889**

AND HERE'S PROOF POSITIVE



For 8½x10 DD
Hoist Serial #9327
—**BUILT IN 1893**



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—**BUILT IN 1892**

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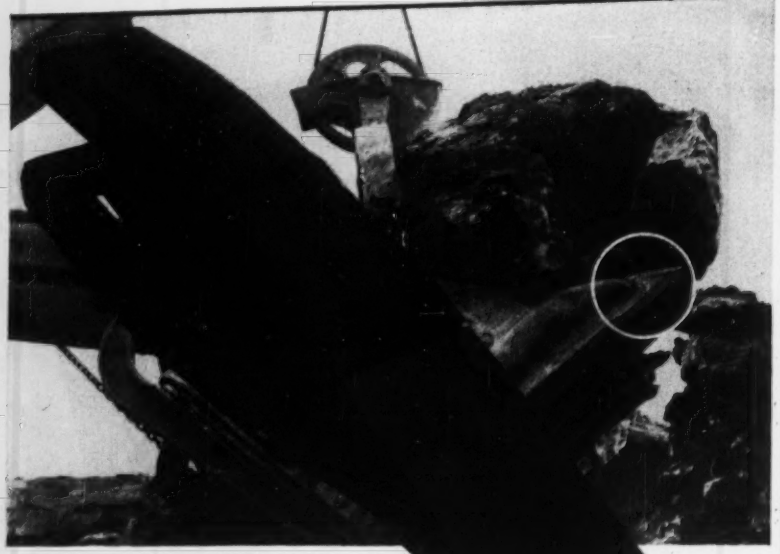
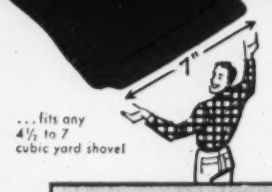
for rock shovels in the 6 yard class



ESCO R7R Increased point life 340% on one hard rock shovel job!



...fits any 4½ to 7 cubic yard shovel

Point life goes up, cost per yard goes down—with this new 7-*inch* shovel point. The self-sharpening R7R is made bigger to give longer point life in tough digging. For example, on one rock digging job, average point life jumped from 10 to 44 hours when the new R7R was used—a 340% *increase!* At another installation, where tonnage had been averaging 76,000 tons per set of teeth, the new R7R points boosted production to 155,000 tons—a 100% increase! *In both cases the ESCO R7R points cost less than the teeth they replaced.*

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BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Atlas Constr. Co. Ltd.**, 4781 St. Catherine St. W., Montreal, Que., CA, **$1,042,832**, 135 ft. high 70x402 ft., rein.-con. frame, GRAIN STORAGE Addn. HALIFAX, N. S. National Harbor Bd., Parliament Bldg., Ottawa, Ont. Bids May 7, awarded May 22. CD 5/13, under L.B.

Domex Co. Ltd., 112 Bond St., Toronto, Ont., CA, **$750,000** two unit, 38,400 sq. ft. record FACTORY on Hannibal St., SMITH FALLS, ONT. R.C.A. Victor Co. Ltd., 1001 Lenoir St., Montreal, Que. CD 3/31.

▲ **Montebello Constr. Co.**, 2289 Letourneaux St., Montreal, Que., CA, **$1,000,000**. 5 story 120x161 ft., 71-unit APARTMENT Bldg. on Sherbrooke St. near Grand Blvd., MONTREAL, QUE., R. J. Desjardins, 3605 Hochelaga St., Montreal, Que., archt.

C. Duranceau Ltd., 2545 Jaques Hertel St., Montreal, Que., CA, **$670,000**. 1 story 56x675 ft., rein.-con., structural steel, brick FACTORY, MONTREAL, QUE. Standard Paper Box Ltd., 6240 Park Ave., Montreal, Que. CD 3/25.

Proposed Projects

WATER SUPPLY

Calif., Hemet—City, City Hall, voted **$550,000** bonds, municipal water sys. J. R. Lester Boyle, Spurgeon Bldg., Santa Ana, consult. engr. CD 4/21.

Ind., Bloomington—Bd. P. Wks., Mayor E. Kelly, chn. City Hall, WW imprvs. filtration plant addns., new water mains, **$250,000**. Consoer, Townsend & Assocs., 351 E. Ohio St., Chicago, Ill., consult. engrs. CD 11/11/52.

Ind., Greenfield—Bd. P. Wks., City Hall, WW imprvs., pumping plant imprvs., water tank, distr. sys. **$500,000**. Moore & Garnes, 830 Ind. Pythian Bldg., Indianapolis, Zone 4, consult. engrs. CD 5/15/52.

Ind., Muncie—Muncie Waterworks Branch of American Water Works Co., 908 West St., Wilmington, Del. large elevated water tank. **$400,000**. CD 7/1/49.

Mich., Grand Rapids—City, George E. Bean, mgr., City Hall, 12,200 ft. 8 and 16 in. c.i. water mains, northern sect. **$120,000**. Millard M. Moore, City Hall. CD 1/11/51.

O., Worthington—Bd. P. Affairs, Mayor George V. Wing, Worthington, imprv. water processing and storage facilities. **$100,000**.

Pa., Sharpsville—Municipal Water Auth. of Sharpsville, Sharpsville, intake and filtration plant water storage tank, 3 filter beds, storage tank. **$440,000**. Morris Knowles, Inc., Park Bldg., Pittsburgh, engr.

Tex., Beaumont—Willis Thames & Assoc., 3320 French Dr. water sys., in North Beaumont. **$175,000**.

▲ **Tex., Tyler**—City (a) 20 in. water main to Bryant Heater Plant area, **$175,000**, (b) 1 mi. steel elevated water storage tank, **$120,000**, (c) addnl. water mains in existing areas, mostly downtown, **$305,000**, (d) some water distr. lines new and old, mostly residential areas, **$275,000**, (e) some water main connections in General Electric Co. plant area only, **$200,000**, (f) WW rehabilitation, **$175,000**. J. P. Ferrill, city engr. CD 5/20.

Tex., Winnie and Stowell—Trinity Bay Conservation Dist., G. R. Conada, pres. Anahuac, Contr. 1, water lines, pump station, incl. approx. 86,890 lin. ft. 2- to 8-in. c.i. pipe, rein.-con. pump house, appurtenances, **$195,000**; Contr. 2, 75,000 gal. elevated steel storage tank, one 150,000 gal. steel ground storage tank, concrete fdns., **$35,000**; Contr. 3, water supply wells, with pumping units, **$100,000**. Freese, Nichols & Turner, 2111 Natl. Standard Bldg., Houston, consult. engr.

▲ **Wash., Bellevue**—Water District N. 68, Bellevue, water supply line from north fork of Snoqualmie River. **$2,000,000**. Metcalf & Harsta, Arctic Bldg., Seattle, Zone 4, consult. engrs.

SEWERS, WASTE DISPOSAL

Ark., Batesville—City, City Hall, sanitary sewerage imprvs. **$420,000**. Marion L. Crist & Assocs., Union Life Bldg., Little Rock, consult. engrs. CD 4/7/47.

Calif., San Pablo—San Pablo Sanitary District, 2511 San Pablo Ave., San Pablo, sewage treatment plant, **$400,000**, interceptor sewer project, **$200,000**. Richard M. Starns, Jr., 2054 University Ave., Berkeley, consult. engr.

Mass., Worcester—City, Sewer Dpt., E. R. Perry, comr. P. Wks. Dpt., 20 E. Worcester St., sewer. **$120,000**.

Mo., Bolivar—City, sewers, sewage plant, **$165,000**. E. T. Archer & Co., Railway Exchange Bldg., Kansas City, Mo., consult. engrs. CD 5/7.

Pa., Sharon—Supervs. Hickory Twp., R.D. 2, Sharon, sewage disposal plant, Hickory Twp. **$350,000**. Joseph Harris, 672 E. State St., engr. CD 1/22.

▲ **Tex., Beaumont**—Willis Thames & Assoc., 3320 French Dr., storm sewers, **$600,000**; sanitary sewers, **$475,000**, in North Beaumont.

Tex., Tyler—City, (g) sanitary sewer treatment plant, **$400,000**, Wisenbaker, Fix & Assoc., Tyler, consult. engrs.; (h) sanitary sewer collection mains, **$200,000** and (i) general rehabilitation of sanitary sewerage sys. **$150,000**. J. P. Ferrill, city engr. CD 5/20.

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SAUERMAN

Tex., Waco — City, sanitary sewer lines replacement, mostly downtown, $90,000; storm sewer lines replacements, $100,000. CD 5/21/52.

Tex., Winnie and Stowell—Trinity Bay Conservation Dist., G. R. Conada, pres., Anahuac, Contr. 4, 68,305 lin. ft. 6- to 12-in. concrete sanitary sewers, manholes, appurtenances, $225,000; Contr. 5, sewage treatment plant, 2 lift stations, appurtenances, $145,000. Freese, Nichols & Turner, 2111 National Standard Bldg., Houston, consult. engrs.

Wis., Platteville—City, sewage treatment plant addn., alterations, $100,000. Davy Eng. Co., 524 Main St., La Crosse, Wis., consult. engrs.

▲ Ont., Sault Ste. Marie—Municipality, City Hall, sewage disposal plant on waterfront, $2,000,000. E. E. Smith, City Hall, city engr. CD 7/25/45.

BRIDGES

▲ CONNECTICUT—State Hy. Comr., State Office Bldg., Hartford.

Windsor Locks-East Windsor—toll bridge across Connecticut River at Windsor Locks to East Windsor. $7,500,000.

▲ Michigan and Ontario—International Bridge Authority, 801 Seymour St., Sault Ste Marie, Mich., has been reactivated by the Michigan legislature. D. B. Steinman, consult. engr., 96 Liberty St., New York, N. Y., will make report on both bridge and tunnel with recommendations for further action by owner. CD 9/28/43.

▲ Mich., Detroit—City, Carl D. Warner, comr. Dpt. P. Wks., Guardian Bldg., rein.-con., steel bridge to Belle Isle, $10,000,000, another proposal would build a second traffic level on existing bridge, $2,500,000, George R. Thompson, city engr. CD 7/14/44.

Tex., Freeport—Brazoria Co., Freeport, bridge constr. throughout county, $500,000. CD 5/24/51.

▲ VIRGINIA—State Hy. Dpt., 1221 E. Broad St., Richmond.

Middlesex and Lancaster Counties—Rappahannock River Bridge, Grey's Point and Whitestone. $15,000,000. Modjeski & Masters, State Street Bldg., Harrisburg, Pa., consult. engrs. James A. Anderson, c/o owner, hy. comr.

WASHINGTON—State Hy. Comn., Olympia,

King Co.—widening underpass under Aurora Ave. at N. 63 St. in Seattle, on Hy. 1 and widening Aurora St. between N. 72 and 85 Sts. $125,000. W. A. Bugge, state hy. dir.

STREETS AND ROADS

Ia., Keokuk—City, City Hall, street imprvs., $450,000. Stanley Eng. Co., Hershey Bldg., Muscatine, consult. engr. CD 12/8/44.

Ky., Louisville—City, Bd. P. Wks., City Hall, resurf. streets. $100,000. W. W. Sanders, city engr. CD 6/1/51.

▲ NEW JERSEY—State Hy. Dpt., State Office Bldg., Trenton,

Gloucester Co.—road constr. State Hy. Rte. 44, relocation from Pierces Corner to Berkeley Rd., $1,770,000,

road constr. State Hy. Rt. 44, relocation from Repaupo Rd., Bridgeport, $1,200,000

O., Dayton—City, City Hall, imprv. W. Second St. from Delphos to Gettysburg Aves., Decker St. from W. Second St. to Oakridge Dr. $78,628; widen Salem Ave. from 45 to 64 ft. between Plymouth and Lexington Aves., $92,000; widen and resurf. from 32 to 40 and 42 ft. Salem Ave. from Catalpa Dr. to city limits, $125,520. John Hale, city engr. CD 11/28/45.

O., Youngstown—Comrs. Mahoning Co., Court House, resurf. Mahoning-Portage Co. County Line Rd., Ellsworth, Shields and Tippecanoe Rds. $105,000. Samuel Gould, Jr., co. engr.

Tex., Freeport—Brazoria Co., Freeport, general road imprvs., surf., Precincts 1, 2, 3 and 4. $250,000 each.

Tex., Waco—City, general rehabilitation and imprvs., repairing of streets, mostly downtown. $100,000. CD 5/12/48.

EARTHWORK, WATERWAYS

▲ Texas—San Antonio River Auth., c/o Col. W. B. Tuttle, chn., 201 N. St. Marys St., Calaveras Creek Flood Control Dam, San Antonio, $600,000; Escondido Creek Flood Control Dam, Karnes City, $900,000. CD 12/29/43.

▲ Ontario and New York—International Waterways Joint Comn., Govt. of Canada, Ottawa, Ont. and 4 and Independence Aves., N. W., Wash., D. C., U.S.A., 1,550 ft. wier, 20 ft. wide, 1 mi. above Horseshoe Falls scenic portion of Niagara with movable and sluice gates, $14,594,000; excavation and fill in job in the Cascades on Canadian Flank of Horseshoe Falls, $1,582,000; excavation and fill in job in the Cascades on Goat Island flank of Horseshoe Falls, Goat Island is located at edge of crest line of U.S.A. side of Horseshoe Falls, Niagara Falls, $1,360,000. CD 8/23/50, under Ont., Niagara. Unclassified.

LATIN AMERICA

Mexico, Juarez—Juarez Race Track and Foreign Club, Juarez, plans horse and greyhound racing track.

▲ Mexico, Mexico City—Emilio Azcarraga, Televicentro, Mexico City, plans baseball park, $1,150,000.

▲ Mexico, Santa Clara—State Govt. (Jose Vivanco, Govt.) Palacio del Estado, Monterrey, N. L., plans irrigation dam. $1,610,000.

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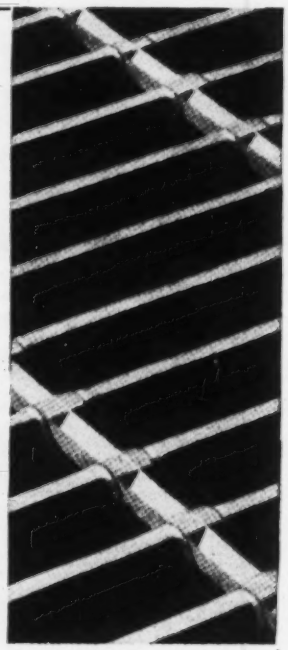

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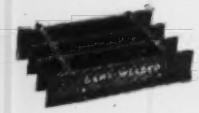

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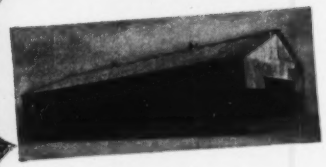

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PUBLIC BUILDINGS

Calif., Bakersfield—JUNIOR HIGH SCHOOL—Bakersfield City School District, 1600 "K" St. plans by E. L. McCoy, 2811 H St. frame, stucco Junior High School, 4 St. between P & R Sts. $300,000. CD 2/6.

Calif., Corona—SCHOOL—Corona School Dist., Corona, voted $600,000 bonds, Corona Junior High School addns. CD 4/28.

Calif., Escalon—SCHOOL—Escalon School District, Escalon voted $620,000 bonds, high school. CD 4/23.

▲ **Calif., Fullerton**—SCHOOLS—Fullerton Unified High School District, 340 E. Wilshire Blvd., voted $2,500,000 bonds, schools. CD 5/5.

▲ **Calif., Los Angeles** — SCHOOLS — Los Angeles Bd. Educ., 1425 S. San Pedro St., plans by Walter E. Erkes, 124 W. 4 St., 5 frame, stucco Dolores St. School bldgs., Wilmington, $430,000, plans by R. A. Lippincott, 6221½ S. Westmoreland Ave., 5 frame, stucco Melvin Ave. School bldgs., Los Angeles $325,000; plans by Walter L. Reichard, 2305 Hyperion Blvd., 5 frame, stuuco Stagg St. School bldgs., Northbridge, $355,000, plans by Benedick & Johnson, 13625 Ventura Blvd. Sherman Oaks, 5 frame, stucco Van Alden School bldgs., Topeka Dr., Reseda, $355,000. CD 6/13.

▲ **Calif., Maricopa**—SCHOOLS—Maricopa School District, Maricopa voted $1,350,000 bonds, schools.

▲ **Calif., Mill Valley**—SCHOOLS—City, City Hall, voted $600,000 bonds, schools. CD 3/30.

Calif., Napa—SCHOOLS—Napa Elementary School District, Napa, voted $500,000 bonds schools. CD 3/10.

Calif., Perris—SCHOOL—Perris Elementary School District, Perris, plans by Bolton Caldwell Moise, 3514 9 St., Riverside, Perris Elementary School addn. $613,000.

▲ **Calif., Pittsburg**—SCHOOLS—Pittsburg Unified School District, Pittsburg, voted $1,250,000 bonds schools. CD 4/8.

Calif., Placerville—SCHOOL—El Dorado Co., Court House, defeated $800,000 bonds, high school addn. CD 3/31.

Calif., Roseville—Roseville Joint Union High School District, Roseville, voted $750,000 bonds schools. CD 5/1.

Calif., Salinas—HIGH SCHOOL—City, City Hall, voted $300,000 bonds, high school rehabilitation. CD 11/22/46.

Calif., San Anselmo—SCHOOLS—San Anselmo School District, San Anselmo, voted $665,000 bonds, school expansion. CD 4/10.

▲ **Calif., San Mateo**—SCHOOLS—San Mateo Union High School District, San Mateo, voted $4,000,000 bonds, schools. CD 2/6.

Calif., West Covina—SCHOOLS—West Covina School District, 851 S. Sunset Ave., $500,000 bond election June 9, schools.

Calif., Whittier—SCHOOLS—Whittier Elementary School District, 215 W. Hardy St., voted $1,270,000 bonds, schools.

▲ **Conn., West Hartford**—SCHOOL—Town, Dr. Edmund H. Thorne, supt. Schools, Memorial Rd., West Hartford, plans by Ebbets-Frid & Prentice, 862 Asylum Ave., Hartford, Elementary Junior High School, King Philip & Mohawk Dr. $3,500,000. CD 6/29/51.

Ind., Jeffersonville—HOSPITAL—Clark County Memorial Hospital, Sparks Ave., plans by Hawskins & Walker, 218 Elsby Bldg., New Albany, Clark County Memorial Hospital addn. $600,000.

Ind., Princeton—SCHOOL—Bd. School Trustees, c/o High School, Princeton, plans by Lester Routt, Citizens Insurance Bldg. Vincennes, 1 story, bsmnt., high school gymnasium addn. $345,000 . CD 1/10/47.

Kan., Kansas City—SCHOOL—Bd. Educ., Library Bldg., 6 and Minnesota Sts., plans by J. W. Radotinsky, 1401 Fairfax Trafficway, Kansas City, Kan., Eugene Ware School addn. $300,000.

Kan., Topeka—SCHOOL—Avondale-Seabrook School Dist., Shawnee Co., voted $300,000 bonds May 5, 2 schools, near here. $700,000. T. W. Williamson & V. H. Loebsack, 1245 Topeka Blvd., archts.

Ky., Louisville—SCHOOL—Jefferson Co. Bd. Educ., 618 Jefferson St., plans by Fred Hartstein and Louis & Henry, McDowell Bldg., elementary school to replace present school, Middletown, $300,000, E. R. Ronald & Assoc., 554 S. Third St., consult engrs. CD 11/10.

Me., Kittery—SCHOOL—Town, Bd. Selectmen, Town Hall, high school. $400,000.

Mass., Acushnet—SCHOOL—Town, A. F. Ford, supt. Schools, and Gerard Charest, chn. School Comn., elementary school. $700,000.

Mass., Attleboro—SCHOOL—City, supt. Schools, plans by Architects Collaborative, 96 Mt. Auburn St., Cambridge, Junior High School, off Dennis St., $300,000; Junior-High School, South Attleboro, $300,000.

Mass., Beverly—GASOLINE STATION and RESTAURANT—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, gasoline station and restaurant, Rte. 128 (south side Beverly) approx. 1,300 ft. east of Rtes. 1 and 3, $300,000, Atlantic Refining Co., Revere, station lessee. Howard Johnson, Inc., Wollaston, restaurant lessee.

Mass., Boxford—GASOLINE STATION and RESTAURANT—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, gasoline station and restaurant, Rte. 1, Newbury Turnpike, west side Boxford. $300,000, Atlantic Refining Co., 140 Lee Burbank Hy., Revere, station lessee, Howard Johnson, Inc., 89 Beale St., Wollaston, restaurant lessee.

▲ **Mass., Boston** — OFFICE — Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, state office, West End. **$30,000,000.**

▲ **Mass.,** East Bridgewater—SCHOOL—Town, School Bldg. Comn., supt. Schools, 4 N. Bedford St., plans by Perry-Shaw & Hepburn Kehoe & Dean, 31 St. James Ave., Boston, high school, Plymouth St. **$1,500,000.**

Mass., Lexington—GASOLINE STATION and RESTAURANT—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, gasoline station and restaurant, Rte. 128 (west side Lexington) 1,000 ft. south Rte. 2A, **$300,000,** Atlantic Refining Co., Revere, station lessee, Howard Johnson, Inc., Wollaston, restaurant lessee.

Mass., Worcester—SCHOOL—City, Leo C. Doherty, asst. supt. Schools, Franklin St., Quinsigamond School addn., 832 Millbury St. **$300,000.**

Mass., Wenham—Beverly—GASOLINE STATION and RESTAURANT—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, gasoline station, restaurant, Rte. 128 Wenham-Beverly line. **$300,000.** Atlantic Refining Co., Revere, station lessee. Howard Johnson, Inc., Wollaston, restaurant lessee.

Mass., Williamsburg—SCHOOL—Town, Frederick B. Warren, chn. Bldg. Comn., South St., Junior-Senior High School, Maple St. **$300,000.**

Mich., Marquette—SCHOOL—City, voted **$400,000.** bonds May 18, elementary school. CD 4/23.

Mich., Sparta—SCHOOL—Bd. Educ., George Fifield, secy. defeated **$450,000** bonds, elementary school. Roger Allen & Assoc., 1126 Grand Rapids National Bank, Grand Rapids, archts. CD 4/29.

Mich., Traverse City—CONVENTION—City, plans by Paul A. Hazelton, Traverse City, 2 story, fdn., 100x170 ft., brick, steel, concrete convention bldg., **$500,000.**

Minn., Echo—SCHOOL—Bd. Educ., O. A. Anderson, clk., voted **$305,000** bonds May 19, grade school addn., H. H. Swanson, 500 Sexton Bldg., Minneapolis, archt.

▲ **Minn., Richfield** (Minneapolis P. O.)—SCHOOL—Bd. Educ., H. E. Rumpel, supt. Schools, voted **$2,750,000.** bonds May 19, high school, 70 St. and Harriet Ave. Thorshov & Cerny, 400 Metropolitan Bldg., Minneapolis, archts. CD 11/28/49.

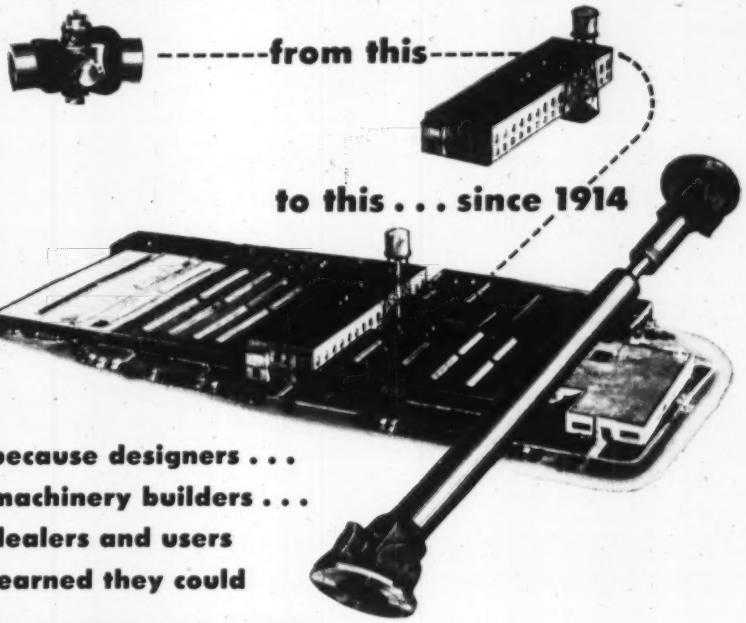
Mo., Hermann—SCHOOL—Bd. Educ. plans by Ludwig Abt, Moberly, elementary school, **$300,000.** CD 5/7.

Mo., Parkville—SCHOOL—Platte Co. School Dist. R-5, Platte City, plans by V. P. Terrell, 1016 Baltimore, Ave., Kansas City, Mo. elementary school, north of here. **$300,000.** CD 5/22.

Neb., Crete—HIGH SCHOOL—Bd. Educ., Crete. **$500,000** bond election June 16, high school. CD 3/25.

N. H., Concord—HOSPITAL—State Dpt. P. Wks. & Hys., State House Annex, Concord, remodel and alter Thayer Bldg., State Hospital. **$375,000.** CD 3/1/43.

N. H., Hillsboro—HIGH SCHOOL—Town, Bd. Selectmen, Ollo York, Town Hall, high school addn. **$300,000.**



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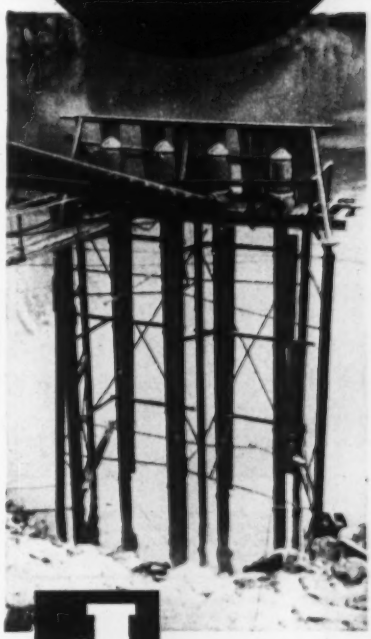

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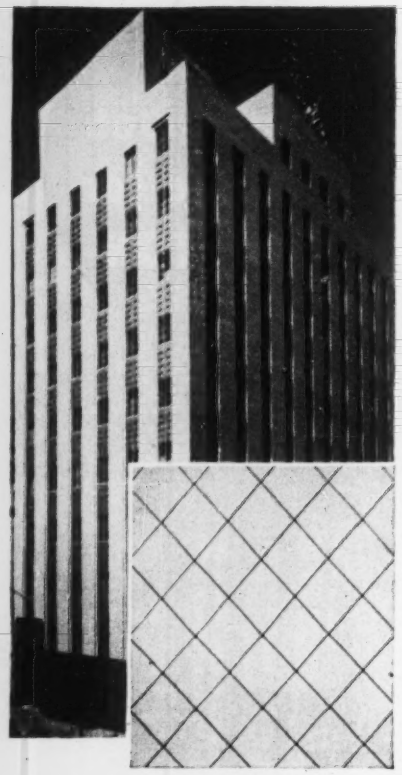

Aid Association for Lutherans Building, Appleton, Wis. Architects, Cram & Ferguson, Boston, Mass., & Maurey Lee Allen, Appleton, Wis.

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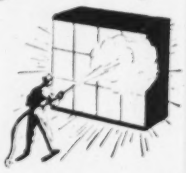

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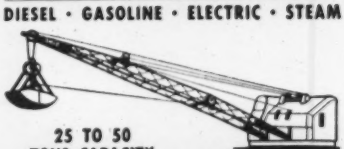

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N. J., Mantua—SCHOOL—Mantua Twp. Bd. Educ., Mantua, voted bonds, Tomlin School addn. $300,000 Hettel & Albert, 501 Cooper St., Camden, archts.

▲ N. Y., Brooklyn—HIGH SCHOOL—Bd. Educ., 49 Flatbush Ave. Exten., Zone 1, plans by Robert J. Reiley & Assoc., 45 W. 45 St., New York, Zone 19, 3 story Junior High School 117, 310-30 Willoughby Ave. $2,900,000. CD 8/5/43.

N. Y., New York—SCHOOL—Bd. Educ., 49 Flatbush Ave. Exten. Brooklyn, Zone 1, plans by Michael Radoslovich, c/o owner, P. S. 80 alterations, 415 E. 120 St. $609,000.

N. C., Raleigh—HEALTH—State of North Carolina, Raleigh, plans by Wm. H. Deitrick, 115 W. Morgan St., add 2 stories to health bldg. under constr. at present. $300,000.

O., Dayton—SERVICES—Dayton Community Chest, J. J. Leff, chn. Bldg. Comn., 225 N. Jefferson St., plans by Lorenz & Williams, 223 W. 1 St., 2 story bsmnt., 40,000 sq. ft. community services bldg., Salem and Edgewood Aves. $400,000.

O., Northfield—SCHOOL—Bd. Educ., Northfield Macedonia School Dist., Northfield, voted bonds May 19, primary school, addn. to Senior High School. $764,000.

Okla., Miami—AUDITORIUM—City, City Hall, voted bonds, municipal auditorium. $500,000. J. R. Koberling, Court Arcade, Tulsa, archt. CD 11/6.

▲ Pa., Cresson—HIGH SCHOOL—Cresson Joint School Dist., Cresson, plans by Hunter, Caldwell & Campbell, 3601 Fifth Ave., Altoona, 2 story, brick, steel Junior-Senior High School. $1,700,000.

Pa., Leeper—HIGH SCHOOL—North Clarion Joint School Dist., Leeper, plans by Raymond Viner Hall, Port Allegheny, 2 story brick, concrete high school, Washington and Farmington Twp. $300,000.

▲ Pa., Phila.—SCHOOLS—Bd. Educ., 21 and Winter Sts., plans by The Kuljian Corp., 1200 N. Broad St., Elwood School, 12 St. and Oak Lane Ave. $1,000,000; plans by Heacock & Platt, 1505 Race St., Carnell School addn. $500,000; plans by Harry Sternfield, 1411 Walnut St., Wister School, Bringhurst and Wakefield Sts., $1,000,000. CD 11/28.

Pa., Scottdale—HIGH SCHOOL—School Dist. of Scottdale, Scottdale, plans by C. C. & E. E. Compton, 419 Thompson Ave., Donora, Junior-Senior High School. $850,000. CD 8/12/49.

Pa., Tullytown—SCHOOL—Tullytown Bd. Educ., Tullytown, plans by Davis, Dunlap & Carver, 1717 Sansom St., Phila., Walt Disney Elementary School. $300,000.

S. C., Columbia—SCHOOL—City Bd. Educ., Admin. Bldg., 1311 Marion St., Glenwood Elementary School. $375,000.

Tenn., Copperhill—HOSPITAL—Copper Basin General Hospital, Copperhill, hospital. $500,000.

Tenn., Memphis—ADMINISTRATION—Memphis State College, Southern Ave., plans by D. T. McGown, 1503 Union St., admin. bldg., addn. $380,000.

▲ Tex., Arlington — SCHOOLS — Arlington Independent School Dist., Arlington, high school, remodel existing high school, repair gymnasium, $475,000; conversion of a school bldg. into a Junior High School, $375,000; constr. Elementary School No. 1, $400,000; Elementary School No. 2, $425,000; Elementary School addn. $325,000. CD 7/7.

Tex., Austin—CAFETERIA, etc.—University of Texas, Administration Bldg., plans by Page, Southerland & Page, 602 West Ave., cafeteria, $350,000; men's dormitory, $750,000. CD 10/28.

Tex., Galena Park—SCHOOLS—Galena Park Independent School Dist., Galena Park, plans by H. Voelcker & Assoc., 1202 Dennis St., Houston, Negro High School, Fidelity Subdivision, $600,000; Pyburn Elementary School. $375,000. CD 3/27.

Tex., Goose Creek—SCHOOLS—Goose Creek Independent School Dist., Baytown, voted bonds, Carver Negro School, $315,000; Junior High School expansion, $300,000; combination work on Lee Senior High School, $335,000.

Tex., Post—HIGH SCHOOL—Post Independent School Dist., Post, plans by Atcheson & Atkinson, Sanford Bldg., Lubbock, brick and masonry high school. $325,000.

Tex., Tivoli—HIGH SCHOOL—Austwell-Tivoli Independent School Dist., S. B. Smyre, supt., Austwell, plans by Charles Hale, Jr., 833 Bandera Rd., high school. $300,000.

Vt., Rutland—HIGH SCHOOL—City, G. J. Ravit, chn., 128 Merchants Row, Junior High School. $500,000.

▲ Va., Woodstock—HIGH SCHOOLS—Shenandoah County School Bd., Woodstock, defeated bonds May 19, two consolidated high schools. $2,000,000. CD 4/29.

▲ Wash., Tacoma—COUNTY-CITY—Pierce Co., County Courthouse, plans by A. G. Lumm, Rust Bldg., county-city bldg. $6,000,000. CD 11/11.

▲ Alaska, Juneau—HIGH SCHOOL, etc.—School Bd., Juneau, plans by L. Forrest, Juneau, high school and community center, $4,000,000. CD 10/23.

Ont., Ajax—SCHOOL—Ajax Public School Area Bd., Box 9, plans by Kent, Barker & McGain, 10 Asquith Ave., Toronto, 1 story, concrete block school, $300,000.

▲ Ont., Chatham—FEDERAL GOVT. PUBLIC—Dpt. P. Wks., Hunter Bldg., Ottawa, plans by J. W. Storey, 21 Seventh St., 3 story, 200x200 ft., structural steel, brick, stone, federal government public $1,000,000. E. A. Gardner, c/o owner, ch. archt. CD 2/4.

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March 30, 1953

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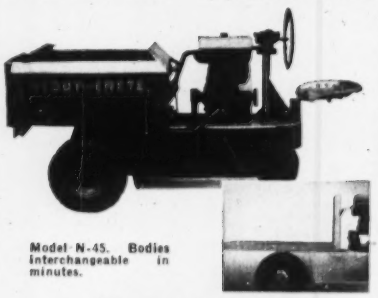

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▲ **Calif., San Jose and Santa Clara**—SHOPPING CENTER—Capitol Co., 1 Powell St., San Francisco, and Macy's, Stockton and O'Farrell Sts., San Francisco 500,000 sq. ft. shopping area, incl. store space parking area, etc. on north side of Stevens Creek between Bascom Ave. and Los Gatos-Santa Clara Rd.

Conn., New Haven—DORMITORY—Yale University, New Haven, plans by Douglass Orr, 11 Whitney Ave., 8 or 9 story, medical school dormitory Oak, Davenport, South and York Sts. $500,000. Conn & Gugler, Kimball & Husted, 101 Park Ave., New York, N. Y., consult. archts. CD 12/19/49.

▲ **Ind., Greencastle**—LIBRARY—DePauw University Alumni Foundation, Green Castle, plans by Mc Guire & Shook, 1400 Fletcher Trust Bldg., Indianapolis, Zone 4, library. $1,000,000 CD 2/24.

▲ **Ind., South Bend**—COLLEGE—St. Mary's College, Sister M. Madelva, C.S.C. Pres., South Bend, plans by Naes & Murphy, 80 E. Jackson Blvd., Chicago, Ill. 2 story U-shaped, brick, stone, rein.-con. college addns., incl. arts bldg. $1,000,000.

Kan., Topeka—SALES and SERVICE—Capital Service Stores, 901 Quincy St., sales and service bldg. $750,000.

Ky., Louisville—OFFICE—Al. J. Schneider, 3720 7th Street Rd., 3 story office, $300,000-$500,000.

▲ **Ky., St. Matthews**—APARTMENT—Helm Bruce, Jr., 1545 Bardstown Rd., Louisville, 900 apartments. $12,000,000.

▲ **Ky., St. Matthews**—SHOPPING CENTER—Robert W. Marshall, St. Matthews, plans by E. W. Augustus, 317 Wallace Ave., shopping center, on 15 acres, Shelbyville Rd., 500 ft. west of Watterson Expressway. Approx. $1,000,000.

▲ **Md., Baltimore**—SHOPPING CENTER—Nuovo Realty Corp., 3201 N. Charles St., plans by Bonnett & Brandt, engrs. and archts., 605 Park Ave., 2 story, bsmnt., steel, rein.-con., masonry Belvedere Shopping Center, Belvedere Ave. and Hillen Rd. $1,000,000.

Md., Baltimore—HOUSES—Harry Samson, Inc., 3720 Park Heights Ave., eighteen 1 story, 30x40x18 ft., ranch type houses, 2900 block Fendall Rd. $300,000.

▲ **Mass., Boston**—OFFICE—Prudential Insurance Co. of America, 763 Broad St., Newark, N. J., office, $2,000,000.

▲ **Mass., Boston**—CIVIC CENTER—Stevens Development Co., Roger L. Stevens, pres., temp. c/o R. M. Bradley & Co., Inc., 250 Boylston St., plans by Architects Collaborative, 96 Mt. Auburn St., Cambridge, Boston Civic Center, Back Bay area, Boston and Albany R. R. yards, $75,000,000, Stone & Webster Engineering Corp., 49 Federal St., Boston, constr. mgrs. and consult. engrs. CD 2/16.

Mass., Jamaica Plain—HOSPITAL—New England Sinai Hospital, Jamaica Plain, c/o Max D. Salomon, Newton, remodeling former Hastings House, $500,000.

▲ **Mass., Newton**—CHAPEL—Newton College of the Sacred Heart, 885 Center St., plans by Maginnis & Walsh, 126 Newbury St., Boston, chapel, library, science hall and dormitories, $1,000,000.

N. H., Nashua—CHURCH—Infant Jesus Roman Catholic Parish Most Rev. Bishop Matthew F. Brady, Rev. Henri A. Blanchard, pastor, 121 Ailds St., plans by Dirsa & Mampron, 922 Elm St., Manchester, masonry church, Ailds St., corner Harvard St. $300,000.

N. Y., Briarcliff—SHOPPING CENTER—Chilmark Stores Corp., c/o Kahn & Jacobs, archts., 2 Park Ave., New York Zone 16, shopping center on 10-acre tract Pleasantville Rd. between Underhill Rd. and Ossining Reservoir. $500,000. Abbott & Merkt, 10 E. 40 St., New York, Zone 17, engrs.

▲ **N. Y., New York**—APARTMENTS—Hudson Manor Terrace Apartments, Inc., 50 E. 42 St., Zone 17, plans by Charles E. Greenberg, 565 Fifth Ave., Zone 17, two 6 story apartments, one Hudson Manor Terrace and 239 St. and other Hudson Manor Terrace and 237 St. $1,400,000.

▲ **O., Cincinnati**—BOWLING CENTER, etc.—Herman Mergard, 1322 E. Mc Millan St., plans by Wilkins-Schrand-Wilkins, Union Terminal Bldg., 2 story, brick, steel 28-lane bowling center, garage and restaurant 9 and Walnut Sts., $1,000,000.

O., Dayton—HOSPITAL—Bd. Trustees, Barney Convalescent Hospital, 1735 Chapel St., plans by Lorenz & Williams, 223 W. 1 St., 1 story hospital addn., south of present bldg. for clinics, 25x60 ft. pool for pacients, recreation room, etc. $300,000.

O., Youngstown—DRIVE-IN-HOTEL—525 Wick Ave., Inc., c/o Edward J. Lewis, Wick Bldg., drive-in-hotel, 525 Wick Ave. $500,000.

Okla., Tulsa—RETAIL STORE—C. R. Anthony Co., 701 N. Broadway, Oklahoma City, plans by J. R. Koberling, Court Arcade, retail store, Admiral Pl. and New Haven. $500,000.

Okla., Tulsa—SUPER MARKET—S. N. Goldman, 12 N. Penn St., Oklahoma City, plans by Berlowitz & Commander, 1916 N. Broadway, Oklahoma City, Humpty-Dumpty Super Market, 5100 E. Admiral St. $350,000.

Pa., Mt. Lebanon—STORES and OFFICE—Fairview Shoping Center, Inc., 111 Newbourne Dr., Pittsburgh, plans by Thomas B. Garman, 701 Washington Rd., Pittsburgh, 2 story bsmnt., 50x131 ft., brick, block store and office. $350,000.

▲ **Pa., Phila.**—STORE—W. T. Grant Co. (lesseel, 130 W. 42 St., New York, N. Y., plans by Thalheimer & Weitz, 1315 Walnut St., department store, 11 and Market Sts. $1,000,000.

▲ **Tenn., Memphis**—SHOPPING CENTER—Sherwood Plaza Co., c/o Everett Woods, archt., 212 Adams St. shopping center. $1,000,000.

Tex., Amarillo—CHURCH—Temple Baptist Church Congregation, Amarillo, plans by W. E. Moore, archt. and engr., 512 W. Kingsmill St., Pampa, masonry church, 33 and Van Buren Sts. $315,000.

Tex., Beaumont—DWELLINGS—Chambers Homebuilders & Real Estate, L. G. Chambers, 5675 Frost St., 38 frame dwellings, $300,000; 42 frame dwellings, concrete slab fdn., $328,000 on 18-acre site.

Tex., Corpus Christi—HOUSING—W. W. Hocker, 500 Blk. Hudson St., c/o John Jones Addition, plans by J. Harris Hein, 213 Ogden St., San Antonio, frame housing. $325,000.

Tex., Corpus Christi—DWELLINGS—John Jonheld, Center Park, plans by J. Harris Hein, 213 Ogden St., San Antonio, 20 frame dwellings. $340,000.

Tex., Dallas—OFFICE, etc.—Radal Corp., 1101 S. Akard St., plans by G. L. Dahl, 2101 N. St. Paul St., 1 story, 96,300 sq. ft. 272x362 ft., masonry, steel office and warehouse, $750,000.

Tex., Fort Worth—HOUSING—W. G. Carrier, 3101 S. Riverside St., 1 story frame housing, concrete slab fdn. $300,000.

Tex., Fort Worth—HOSPITAL—Osteopathic Hospital, c/o Dr. P. Russell, 3705 Camp Bowie Blvd., plans by Joseph R. Pelich, Comm. Std. Bldg., 3 story, bsmnt.; 37,400 sq. ft., stone trim hospital bldg., Montgomery St. $500,000. CD 12/31/46.

Tex., Fort Worth—HOSPITAL—Dr. Phil Russell, 3705 Camp Bowie St., plans by Joseph R. Pelich, Comm. Standard Bldg., 3 story, part bsmt., 37,400 sq. ft. brick esteopathic hospital. $500,000.

Tex., Longview—CHURCH—First Baptist Church, Longview, plans by Wilson, Morris & Crain, 3330 Graustark St., Houston, church. $300,000. CD 3/19.

▲ **Tex., San Angelo**—COMMERCIAL—Trans. Tex. Building Co., 2407 Esperson Bldg., Houston, 10 story, bsmnt., 75x100 ft. masonry commercial. $1,750,000.

▲ **Va., Seven Corners**—SHOPPING CENTER—Lynne Investment Corp. of Washington, 4479 Connecticut Ave. N. W., Wash., D. C., shopping center, incl. 2 department stores. $15,000,000.

Wash., Seattle—CHURCH—Church, Episcopal Church, 4548 Brooklyn Ave., Seattle, Zone 5, plans by W. R. Grant & Son, Lloyd Bldg., Zone 1, rein.-con. church. $350,000.

W. Va., Charleston—CHURCH—Christ Methodist Church, Quarrier and Morris Sts., plans by Chas. A. Haviland, Davidson Bldg., 3 story bsmnt., 50x162 ft., church addn. $300,000 CD 5/4.

Ont., Hamilton—HOTEL—Jack West, 539 Crawford St. Toronto, and Phillip West, 36 Grove St., 4 story, concrete, steel, brick hotel, 1308 King St. E. $700,000.

▲ **Ont., Ottawa**—SHOPPING CENTER, etc.—Owner, c/o Samuel Berger, Q.C., 227 Laurier Ave. W., shopping center, $1,500,000; housing and apartment project, McKellar Golf Course old site, Carling Ave., $5,500,000.

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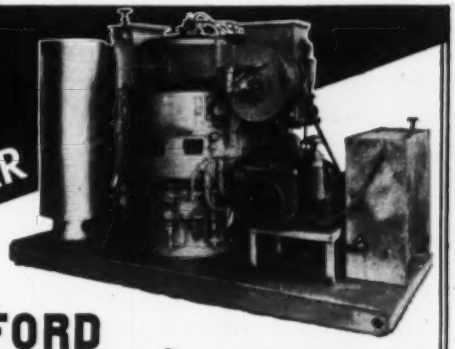

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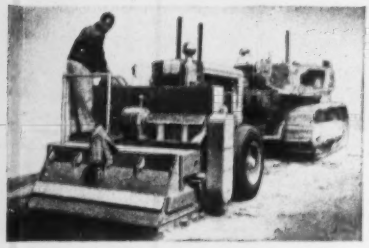

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▲ **Ont., Toronto**—SHOPPING CENTER—Principal Investments Ltd., 67 Richmond St. W., shopping center, incl. 40 stores, drive-in theatre, recreational area, Dixie Rd. and Queen Elizabeth Highway $4,000,000.

▲ **Que., Montreal**—OFFICE—Merchant Bank of Canada, 255 St. James St. W., plans by Lawson & Betts, 660 St. Catherine St. W., 8 story, 177x130 ft., rein.-con., steel frame head office, concrete fdn., St. James St. and Victoria Square. $2,000,000.

Que., Montreal—NURSES RESIDENCE—Royal Edward Laurentian Hospital Bd., St. Urbain St., plans by McDougall, Smith & Fleming, 1235 McGill College Ave., 6 story, bsmnt. nurses residence, St. Urbain St., near Pine Ave. W. and tunnel to main bldg. $450,000.

▲ **Que., Quebec City**—DWELLINGS—Quebec Land Co., Ltd., 569 1ere St., 200 dwellings, Commissionaire Hy. $1,600,000.

▲ **Sask., Saskatoon**—HOSPITAL—St. Paul's Hospital Bd., Ave. P and 20 St. W., Saskatoon, 6 story Y shaped wing hospital exten. $2,000,000. CD 2/25/49.

INDUSTRIAL BUILDINGS

Calif., Culver City—WAREHOUSE—Klein-Norton, 1707 S. Los Angeles St., Los Angeles, plans by Jones & Emmons, 8925 Beverly Blvd., Los Angeles, 22,000 sq. ft. reinforced brick warehouse, $200,000.

Fla., Marathon—GENERATING PLANT—Florida Keys Electric Co-operative Assn., Tavenier, plans by Wallace M. Baxter, 7620 S.W. 60 Ave., Miami, electric generating plant. E. P. McLean Eng. Co., Moultrie, Ga., consult. engrs. CD 9/11/52, under Unclassified, Florida.

Ga., Atlanta—PLANT—Puritan Chemical Co., 916 Ashby St. N.W., plant addn. $100,000.

Ind., Shoals—FACTORY—United States Gypsum Co., 300 W. Adams St., Chicago 6, Ill., factory 4 mi. east of here.

Mich., Bronson—FACTORY—Bronson Reel Co., Bronson, 1 story, masonry factory addn. $250,000.

Mich., Rochester—PLANT—Higbie Mfg. Co., Fourth and Water Sts., Rochester, 1 story, masonry Avon Tube Division Plant. $250,000.

▲ **Mich., Trenton**—MILL—McLouth Steel Corp., Donald B. McLouth, pres., 300 S. Livernois St., Detroit, steel rolling mill, ingot plant, blast furnace, ore docks, $100,000,000.

Neb., Omaha—PARKING—Omaha Parking Co., John F. Davis, pres., First Natl. Bank, 16 and Farnam Sts., plans by John Latenser & Sons, 1307 Farnam St., parking bldg., 14 and Farnam Sts. $350,000. CD 6/27/52.

Pa., Butler—WAREHOUSE, etc—West Penn Power Co., West Penn Bldg., Pittsburgh, plans by Hoffman & Crumpton, 700 Century Bldg., Pittsburgh, 1 and 2 story, steel, brick and block warehouse and garage. $250,000.

S. C., Greenville—MILL—Deering-Milliken Corp., P.O. Box 2327, mill addn. $125,000.

Tenn., Nashville—WAREHOUSE—General Retail Corp., Craighead Ave., warehouse addn. $200,000.

Tenn., Shelbyville—MILL—Shelbyville Mills, Shelbyville, Mill Addn. No. 2. $600,000.

▲ **Tex., Amarillo**—REFINERY—The Texas Co., 720 San Jacinto St., Houston, other refinery production expansion facilities. $2,000,000. M. W. Kellogg Co., M. Esperson Bldg., Houston, consult. engrs. CD 11/15/51.

Tex., Conroe—PLANT—Marine Aircraft Corp., Eagle Mountain Lake, Fort Worth, branch mfg. plant, $500,000.

▲ **Tex., Houston**—PLANT—Houston Post, The Houston Post Bldg., plans by H. Voelcker & Assoc., 1202 Dennis St., 130,000 sq. ft. printing plant. Approx. $4,000,000. George Smith, 616 Cortlandt St., and Chas. V. Chenault, 1202 Dennis St., consult. engrs. CD 5/26.

▲ **Tex., Houston**—PARKING and OFFICES, etc.—National Bank of Commerce, Natl. Bank of Commerce Bldg., plans by Wilson, Morris & Crain, 3330 Graustark St., 12 story auto parking and offices addns., adjacent to bank bldg. $1,400,000. Robert J. Cummins, 1208 Bankers Mortgage Bldg., consult. engr. CD 1/14.

▲ **Tex., Houston**—PLANT—San Jacinto Chemical Corp., San Jacinto Ordnance Depot, expanding anhydrous ammonia plant from 70 tons daily to 110,000 tons daily. $600,000. CD 3/18.

Tex., Tyler—SHOP—Cecil McCullars, Tyler, 1 story, 75x265 ft. brick, tile shop center, concrete pier and beam fdn. $125,000. Hobart Plunkett, 1320 E. Rosland St., consult. engr.

UNCLASSIFIED

Alabama—RURAL DISTRIBUTION LINES, etc.—Wiregrass Electric Co-operative, Hartford, 160 mi. rural distr. line and sys. imprvs., Geneva Co. $620,000.

Ala., Langdale—GAS DISTRIBUTION SYSTEM—City, natural gas distr. sys. $200,000.

Arkansas—RURAL DISTRIBUTION LINES, etc.—Riceland Electric Co-operative, Stuttgart, 30 mi. rural distr. lines and sys. imprvs. Arkansas Co. $290,000.

Colorado—RURAL DISTRIBUTION LINES—Holy Cross Electric Assn., Glenwood Springs, 11 mi. tie lines, 17 mi. 24.9 kv transmission line, related sub-stations, completion of previously approved construction, Eagle Co. $635,000.

▲ **Colorado**—RURAL DISTRIBUTION LINES—North Park Rural Electric Assn., Walden, 208 mi. rural distr. lines, headquarters facilities and sys. imprvs., Jackson Co. $1,625,000. CD 4/7/50.

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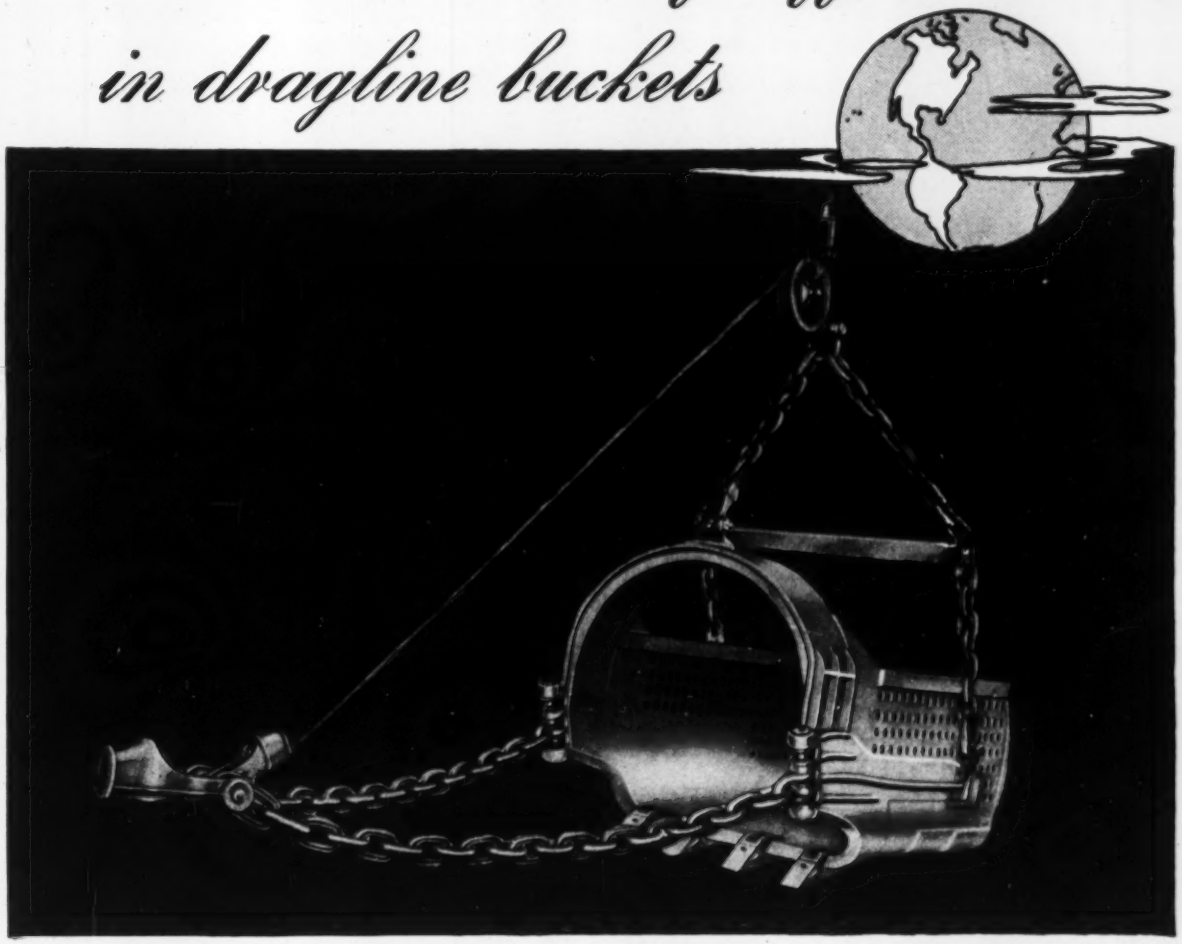

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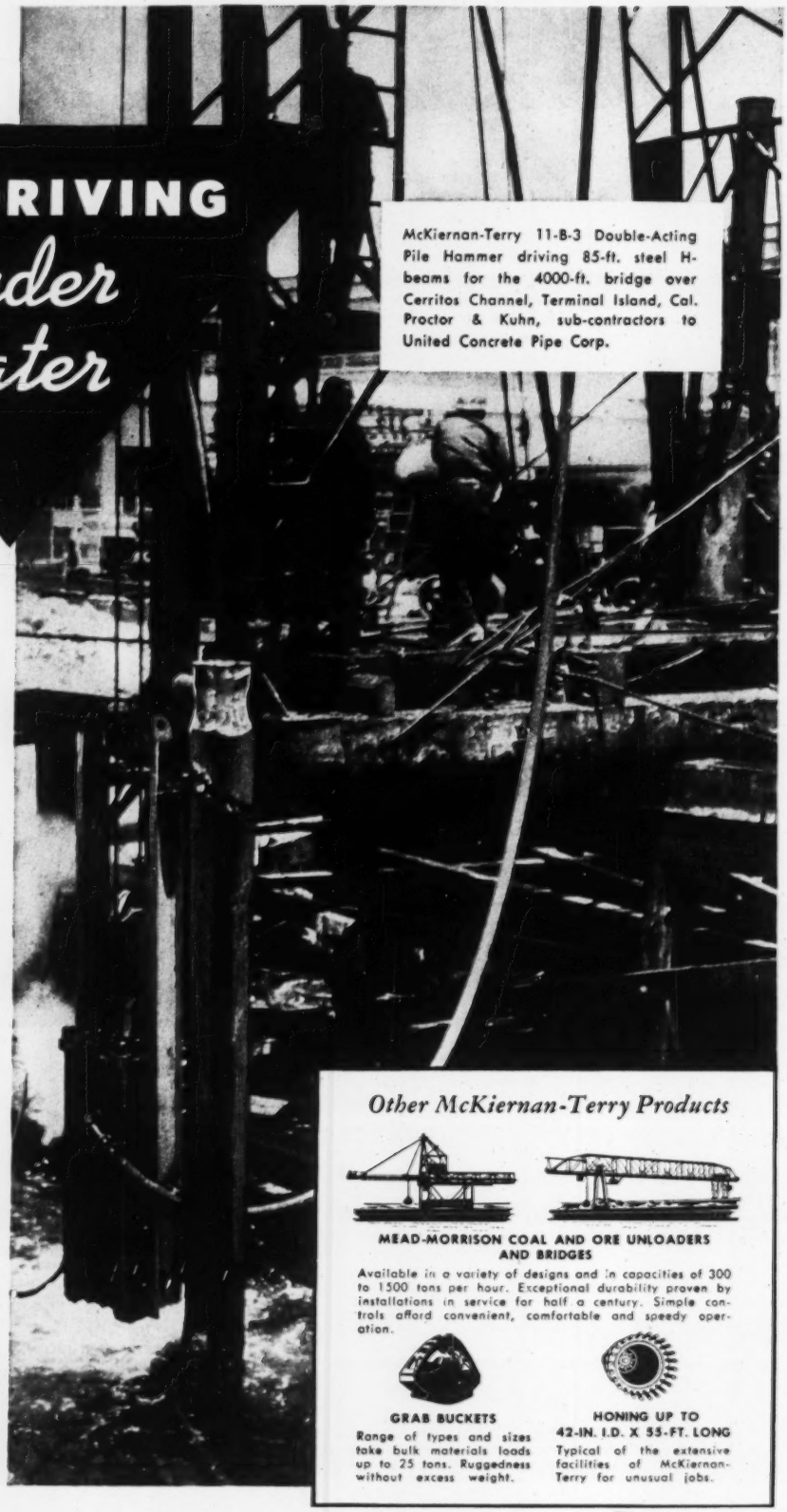

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Georgia—RURAL DISTRIBUTION LINES—Flint Electric Corp., Reynolds, rural distr. lines, Taylor Co. $640,000. Southern Eng. Co., 1000 Crescent Ave. N.E., Atlanta, consult. engr.

Ga., Bremen—GAS DISTRIBUTION SYSTEM—Town, natural gas distr. sys. $150,000.

Ga., Calhoun—GAS DISTRIBUTION SYSTEM—Town, natural gas distr. sys. $200,000.

Ga., Carrollton—GAS DISTRIBUTION SYSTEM—City, natural gas distr. sys., $195,000.

Ga., Cartersville—GAS DISTRIBUTION SYSTEM—City voted bonds, natural gas distr. sys. $900,000. CD 4/28.

Ga., Cedartown—GAS DISTRIBUTION SYSTEM—Town natural gas distr. sys. $200,000.

Ga., Douglasville—GAS DISTRIBUTION SYSTEM—Town natural gas distr. sys. $150,000.

Ga., Forsyth—GAS DISTRIBUTION SYSTEM—Town, natural gas distr. sys. $125,000.

Ga., Gray—GAS DISTRIBUTION SYSTEM—Town natural gas distr. sys. $200,000.

Ga., Griffin—GAS DISTRIBUTION SYSTEM—City, natural gas distr. sys. $750,000.

Ga., Manchester—GAS DISTRIBUTION SYSTEM—Town natural gas distr. sys. $200,000.

Ga., Newnan—GAS DISTRIBUTION SYSTEM—City natural gas distr. sys. $300,000.

Ga., Rockmart—GAS DISTRIBUTION SYSTEM—Town, natural gas distr. sys. $150,000.

Ga., Tallapoosa—GAS DISTRIBUTION SYSTEM—City natural gas distr. sys. $200,000.

Ga., West Point—GAS DISTRIBUTION SYSTEM—City natural gas distr. sys. $105,000.

Iowa—RURAL DISTRIBUTION LINES—O'Brien County Rural Electric Co-operative, Primghar, rural distr. lines and sys. imprvs., O'Brien Co. $158,000. Brown Eng. Co., 322 KP Bldg., Des Moines, consult. engrs. CD 2/14/49.

Iowa—RURAL DISTRIBUTION LINES—Sioux Electric Co-operative Assn., Orange City, rural distr. lines and completion of construction, Sioux City. $118,000. Brown Eng. Co., 322 K P Bldg., Des Moines, consult. engr.

Mass., Clinton—YOUTH CENTER—Clinton Area, Youth Center, Mrs. Bessie V. Smith, 8 Top St., youth center. $300,000.

▲ Mass., Salisbury—BEACH DEVELOPMENT—State, Dpt. P. Wks., 100 Nashua St., Boston, beach development, 3 deck bath house, ¾ mi., 4-lane hy. across beach, parking space, access road from Rte. 1-A, $3,000,000. CD 2/7/45.

Mich., Detroit—SWIMMING POOLS—City, J. J. Considene, genl. supt. Parks & Recreation, 1214 Griswold St., plans by Giffels & Vallet, Inc., 1000 Marquette Bldg., concrete outdoor swimming pool, piping accessories, Michael Gallagher Playground, Vernor and St. Jean Sts., $150,000; concrete swimming pool, West Side, Norfolk-Wisconsin Playground, $150,000; concrete outdoor swimming pool, piping, accessories, Lipke Playground, 7 Mile Rd. and Van Dyke St., $150,000; concrete outdoor swimming pool, 16 acre site, Lorwyn R. Peterson Playfield, Greenfield and Curtis Sts., $150,000. George R. Thompson, city engr. CD 9/4/52.

Miss., Aberdeen—NATURAL GAS SYSTEM—City, natural gas distr. sys. $750,000.

Miss., Houston—NATURAL GAS SYSTEM—City, natural gas distr. sys. $500,000.

Miss., Tupelo—NATURAL GAS SYSTEM—City, natural gas distr. sys. $850,000.

Miss., West Point—NATURAL GAS SYSTEM—City, natural gas distr. sys. $800,000.

Mo., Eureka—CAMP—Beamont Scout Reservation, c/o Col. Jos. F. Vollmar, chn., 8920 Julia Dent Dr., St. Louis, Zone 14, development of Boy Scout camp on 2,400 acre tract at jct. of U. S. No. 66 and Antire Rd. between Eureka and Valley Park, $690,000.

▲ Mo., St. Joseph—AUDITORIUM—City, Bd. P. Wks., $1,433,000 bond election June 23, auditorium. CD 4/23.

Nebraska—RURAL DISTRIBUTION LINES—Midwest Electric Membership Corp., Grant, rural distr. lines and sys. imprvs., Perkins Co. $700,000. Flora Eng. Co., 56 and Holly Sts., Denver, Colo., consult. engrs. CD 3/30/50.

▲ Okla., Oklahoma City—FAIRGROUNDS—City, City Hall, plans by Phil Wilbur, Stillwater, fairgrounds, $4,500,000. Treat Eng. Co., Plaza Court Bldg., consult. engr. CD 5/15/50.

Texas—GAS LINES—Fort Worth Basin (Gas) Pipe Line Co., c/o O. R. Smith, 3601 N. Sylvania St., Fort Worth, laying some gas-gathering line units in fields, Eastland, Eastland Co. $75,000; gas gathering lines in southwest fields of Taylor Co., $78,500; gas-lines gathering unit in Coleman Fields, Coleman Co. $80,000; gas-gathering lines in Coke Co. fields, $90,000; gas-gathering lines in Runnels field, at Ballinger, Runnels Co., $70,000; gas pipe line units in connecting fields to gather flare and dry gas Comanche Co., $65,000. CD 12/23.

Tex., San Antonio—GAS MAINS—City Public Service Bd., 201 N. St. Marys St., repairing, rehabilitation existing gas mains. $750,000. CD 1/30.

Ont., Toronto—TRANSFORMER STATION—Ontario Hydro-Electric Power Comn., 620 University Ave., transformer station at Bouchette & Basin St. and equipment. $891,000.

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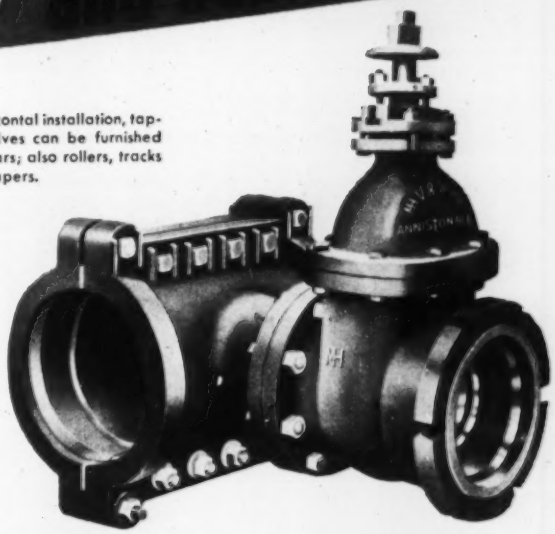

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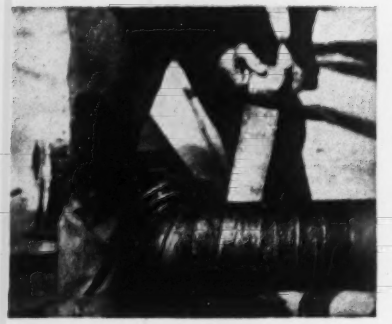

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Bricklayers are receiving $3.40 per hr; carpenters, $2.71 per hr; and common laborers, $1.85 per hr.

Bidders include:

1C	John Delphia, Patterson, California	$1,439,530
2	Piombo Const. Co., San Francisco, Calif.	1,485,333
9	Chas. L. Harney, Inc., San Francisco, Calif.	2,436,920
EE	Water District Forces	1,423,728

Bids: 3-11-53 Items	Unit	Quantity	Unit Prices 1C	2
Divert & care for creek & unwatering foundation	ls	1	$38,280	$36,790
Bench excavation	cy	4,700	5.75	2.90
Trench excavation	cy	600	9.00	5.90
Install 36" outlet pipe	lf	1,100	5.60	6.00
Fabricate 36" miters	ea	7	27.00	30.00
Install outlet wye & inlet bend	ls	1	470.00	500.00
Install gate valves, meters & appurtenances	ls	1	500.00	550.00
Drill holes & grout anchor bars outlet pipe	lf	900	1.30	1.50
Reinf stl & anchor bars outlet pipe jacket	lb	100,000	0.09	0.09
Reinf stl outlet structure & inlet structure anchor block	lb	3,000	0.09	0.09
Formed conc in outlet pipe jacket, cut-off walls & anchor bars	cy	300	45.00	55.00
Trench conc in outlet pipe jacket, cut-off walls & anchor block	cy	500	31.00	45.00
Foundation excavation	cy	38,800	1.15	0.50
Fndn exc stock-piled	cy	26,000	0.46	0.14
Fndn exc wasted	cy	38,000	0.62	0.14
Drilling grout holes 0'-20'	lf	2,000	4.70	2.75
20'-75'	lf	1,100	5.00	5.50
75' & up	lf	200	5.20	5.60
Grout connections	holes	100	11.00	11.00
F&P grout	cf	3,300	3.50	3.00
Stripping borrow areas	cy	88,100	0.88	0.45
F&P rock drain	cy	5,000	11.00	8.00
Impervious embankment, zone 1	cy	612,500	0.79	0.73
Pervious embankment in rock fill, zones 2&3	cy	195,700	0.10	0.14
Pervious embankment in rip-rap	cy	10,000	0.80	0.14
Prepare log booms	ls	1	600.00	1,000
Exc for inlet structure	cy	3,200	1.40	0.80
Drill holes & grouting anchor bars for inlet structure	lf	225	4.00	4.00
Reinf & anchor stl in inlet structure	lb	41,000	0.09	0.09
Install 48" cmt lined stl pipes in inlet struct	lf	275	16.00	17.00
Conc in inlet struct	cy	285	53.00	70.00
Install sluice gates in inlet structure	ls	1	3,800	2,500
Install coarse & fine screens in inlet struct	ls	1	650.00	650.00
Install misc met work in inlet structure	lb	6,300	0.25	0.25
Rock exc for spillway	cy	239,000	1.08	1.69
Waste of rock in exc. spillway	cy	80,000	0.15	0.15
Drill holes & grout anchor bars in spillway	lf	9,800	1.30	1.40
Reinf stl & anchor bar stl in spillway	lb	251,500	0.09	0.09
Conc in spillway weir & lining	cy	2,290	44.00	62.00
Conc in spillway bucket	cy	380	36.00	48.00
Weep holes in spillway structure	holes	106	7.00	3.00
Channel clearing below spillway	ls	1	1,000	1,375
Furn mat & erect footbridge across spillway	ls	1	2,100	3,000
Widen existing road	cy	11,900	1.20	1.25
Exc for north road	cy	29,100	0.90	0.96
Exc for pumpline road	cy	29,500	0.70	0.40
Construction of temporary access road	ls	1	4,000	2,000
Roadway grading	sta	100	10.00	13.50
Culvert installation on north roads	lf	600	2.10	4.00
Culvert installation on pumpline road	lf	570	3.00	4.00
Special culvert installation of Little Carson Creek & North Fork	ls	1	1,400	4,800
Install 12"-16"-24" welded steel pipeline	lf	5,000	4.70	5.00
Field fabricate miters for pipeline	miter	40	20.00	25.00
Furn & place anchor blocks	cy	7	60.00	120.00
Excavation for pump ramp	cy	350	2.60	4.00
Reinf stl for pump plant ramp	lb	2,400	0.09	0.09
Conc for pump plant ramp	cy	41	100.00	120.00
Const of housing for power hoist	ls	1	900.00	1,000
Installation of pumping plant, 12" pipe & equip	ls	1	1,850	1,800
Construct chlorination bldg	ls	1	7,200	8,000

Airport paving, Louisiana

Three bidders competed for a $2,253,780 contract for construction of additional aprons, taxiways, and an apron grid duct system at the Lake Charles Air Force Base, Louisiana. The contract was awarded by the U. S. Army Engineers to T. L. James & Co., Inc. and W. R. Aldrich & Co., Ruston, Louisiana, the low bidders.

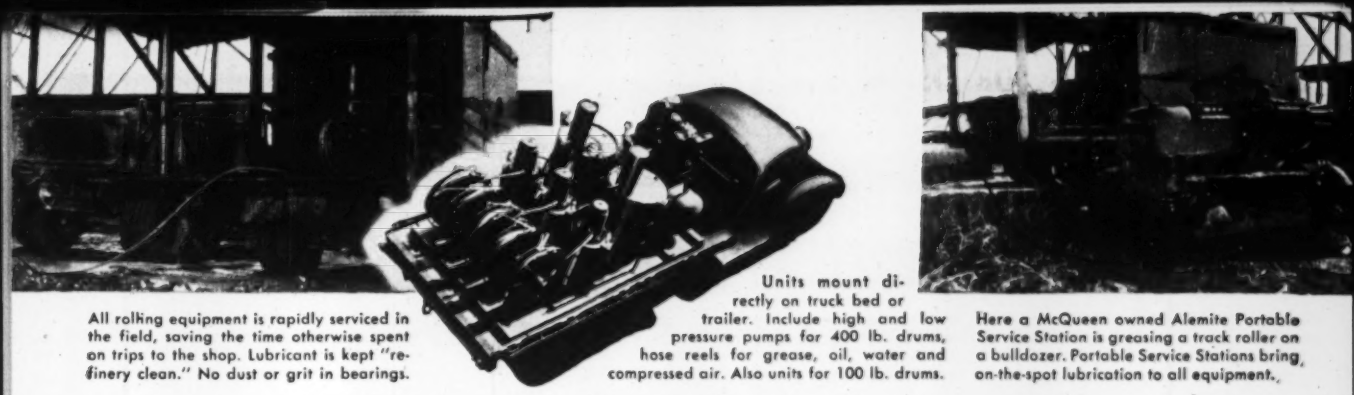
Over 123,800 square yards of 17-inch thick concrete pavement and 6,250 square yards of 13-inch concrete overlay will be required for the job.

In this area bricklayers are receiving $2.95 per hr; carpenters, $2.32 per hr; and common laborers, $1.30 per hr.

Bidders include:

1C	T. L. James & Co., Inc. & W. R. Aldrich & Co., Ruston, Louisiana	$2,253,800
2	Farnsworth & Chambers Co., Inc., Houston, Texas	2,322,210
3	Foster & Creighton Co., Nashville, Tenn.	2,496,948
EE	Corps of Engineers, U. S. Army	2,358,865

Bids: 3-20-53 Items	Unit	Quantity	Unit Prices 1C	2
Group 1				
Excavation	cy	91,575	$0.75	$0.80
Concrete pavement	sy	125,000	5.88	5.60
Cement	bbl	73,958	3.95	4.00
Tie-down anchors	ea	1,242	6.50	30.00
Pipe, drainage, 24"	lf	550	7.50	9.50
30"	lf	2,310	8.00	10.00
36"	lf	1,575	11.00	13.50
42"	lf	1,230	13.00	15.00
48"	lf	880	17.50	19.00
Headwalls, concrete	ea	2	350.00	300.00
Manholes	ea	4	600.00	400.00
Catch basins (new)	ea	9	700.00	600.00
Relocation of tetrahedron	ls	1	1,500	1,000
Fuel hydrants	ea	3	800.00	400.00
Group 2				
Excavation	cy	69,250	0.75	0.80
Concrete pavement	sy	98,778	6.00	5.95
Concrete pavement (overlay)	sy	6,250	5.08	4.60
Concrete transition ramp	sy	400	6.00	3.60
Cement	bbl	61,421	3.95	4.00
Remove asphalt ramp	ls	1	1,200	500.00
Remove concrete paving	ls	1	15,000	18,000
Pipe, drainage, 48"	lf	340	16.00	20.00
12"	lf	340	4.00	6.50
Lowering sewer MH & removing catch basin	ls	1	400.00	200.00
Headwalls, concrete	ea	1	450.00	300.00
Fire hydrants	ea	3	750.00	100.00
Rem & replace 6" waterpipe	lf	300	8.50	6.50
Tie down anchors	ea	975	6.50	30.00
Group 3				
Excavation	cy	6,500	0.75	0.95
Concrete pavement	sy	7,085	6.00	6.85
Cement	bbl	4,190	3.95	4.00
Group 4				
Electrical facilities	ls	1	45,000	71,320



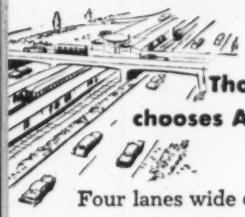
All rolling equipment is rapidly serviced in the field, saving the time otherwise spent on trips to the shop. Lubricant is kept "refinery clean." No dust or grit in bearings.

Units mount directly on truck bed or trailer. Include high and low pressure pumps for 400 lb. drums, hose reels for grease, oil, water and compressed air. Also units for 100 lb. drums.

Here a McQueen owned Alemite Portable Service Station is greasing a track roller on a bulldozer. Portable Service Stations bring on-the-spot lubrication to all equipment.

how Alemite *"Friction Fighters"* guard the machines...

DIGGING A BED FOR A $92,000,000 SUPER HIGHWAY



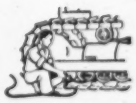
Thomas McQueen Company chooses Alemite portable service station for Chicago project

Four lanes wide each way, with room in the middle for an open subway. Running all the way from downtown Chicago to the city limits—without a stop light or a cross street—because it is "down in the ditch," below the level of regular streets. That's the Congress Street Super Highway now under construction in Chicago.

Faced with the tremendous task of earth moving and construction involved, plus a tight time schedule, the Thomas McQueen Company, a prime contractor on the job, turned to Alemite Portable Service Stations to protect vital equipment—and to save these *three* ways—

1. **SAVE TIME!** By bringing complete power lubrication to all equipment right on the job—safely, efficiently.
2. **SAVE MONEY!** By cutting expensive lubrication "downtime"—increasing output of both men and machines—and slashing operating and lubrication costs.
3. **SAVE EQUIPMENT!** By greatly reducing the possibility of costly bearing failure—keeping rigs running smoother longer.

Get these four services with Alemite portable service stations



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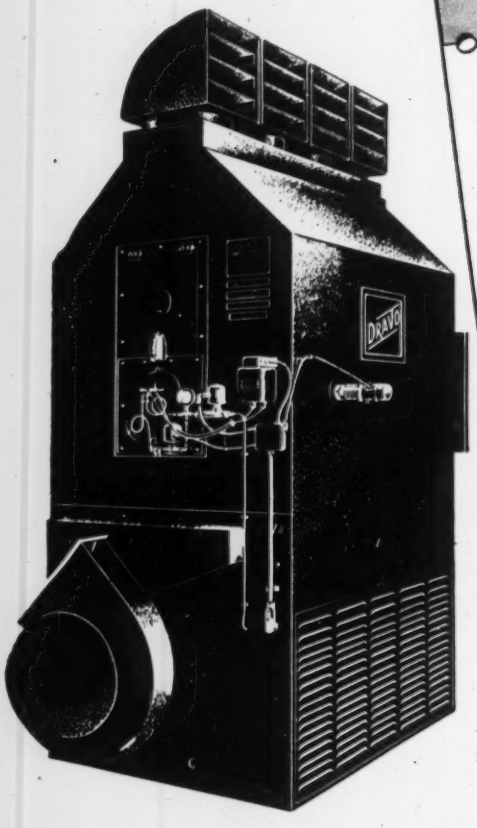
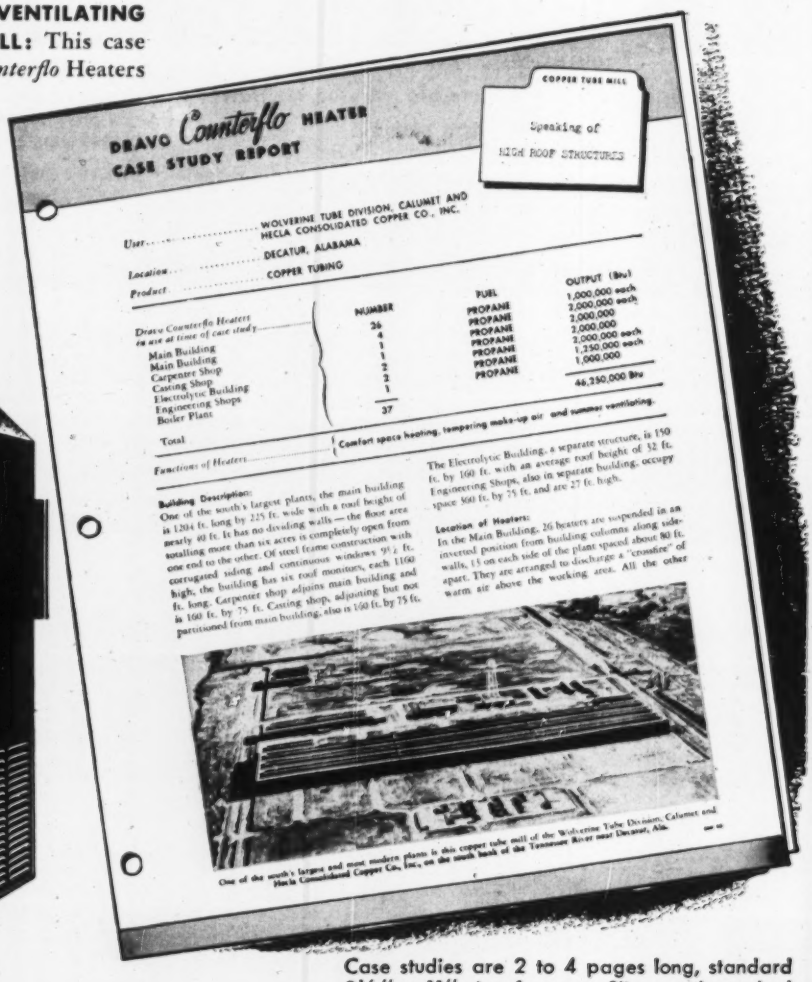
Complete information—names, diagrams and photographs, along with the results obtained by using Dravo Heaters—is provided in detailed case studies, covering a wide variety of heating problems in many types of industrial buildings. If you buy, specify or recommend space heating equipment, these case studies will be of value to you.

provide comfort heat in winter, summertime ventilation and fresh, outside air to replace foul air exhausted by ventilators over furnaces. At this modern plant, heat is delivered at the working level and kept there; the Dravo recirculation system keeps roof heat losses low. Heaters are automatic in operation; maintenance costs are low. Get this case study . . . and others on different problems . . . FREE!

FOR EXAMPLE...

COMPLETE HEATING AND VENTILATING FOR A SIX-ACRE TUBE MILL: This case study tells how 37 Dravo *Counterflo* Heaters





DRAVO *Counterflo* HEATER
CASE STUDY REPORT

COPPER TUBE MILL
Speaking of
HIGH ROOF STRUCTURES

User ..... WOLVERINE TUBE DIVISION, CALUMET AND HECLA CONSOLIDATED COPPER CO., INC.
Location ..... DECATUR, ALABAMA
Product ..... COPPER TUBING

Dravo Counterflo Heaters on use at time of case study	NUMBER	FUEL	OUTPUT (Btu)
Main Building	26	PROPANE	1,000,000 each
Main Building	4	PROPANE	2,000,000 each
Carpenter Shop	1	PROPANE	2,000,000
Casting Shop	1	PROPANE	2,000,000
Electrolytic Building	2	PROPANE	2,000,000 each
Engineering Shops	2	PROPANE	1,250,000 each
Boiler Plant	1	PROPANE	1,000,000
Total	37		46,250,000 Btu

Functions of Heaters ..... Comfort space heating, tempering make-up air and summer ventilating.

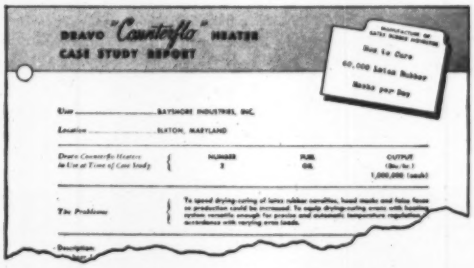
Building Description:
One of the south's largest plants, the main building is 1204 ft. long by 225 ft. wide with a roof height of nearly 40 ft. It has no dividing walls — the floor area totaling more than six acres is completely open from one end to the other. Of steel frame construction with corrugated siding and continuous windows 9½ ft. high, the building has six roof monitors, each 1160 ft. long. Carpenter shop adjoins main building and is 160 ft. by 75 ft. Casting shop, adjoining but not partitioned from main building, also is 160 ft. by 75 ft. The Electrolytic Building, a separate structure, is 150 ft. by 160 ft. with an average roof height of 32 ft. Engineering Shops, also in separate building, occupy space 360 ft. by 75 ft. and are 27 ft. high.

Location of Heaters:
In the Main Building, 26 heaters are suspended in an inverted position from building columns along side-walls, 13 on each side of the plant spaced about 80 ft. apart. They are arranged to discharge a "crossfire" of warm air above the working area. All the other

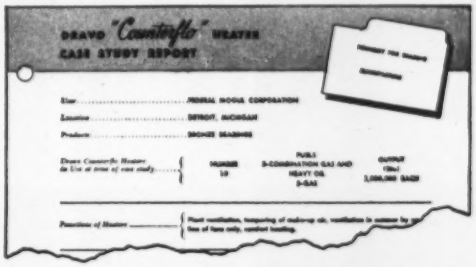
One of the south's largest and most modern plants is this copper tube mill of the Wolverine Tube Division, Calumet and Hecla Consolidated Copper Co., Inc., on the south bank of the Tennessee River near Decatur, Ala.

Case studies are 2 to 4 pages long, standard 8½" x 11" size for easy filing, and punched for 3-ring binder.

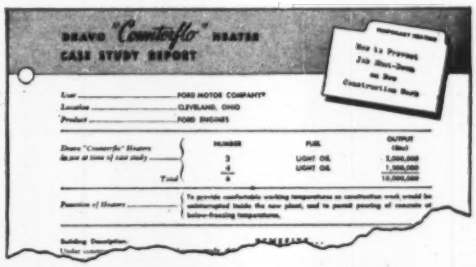
VERSATILE DRAVO *Counterflo* HEATERS



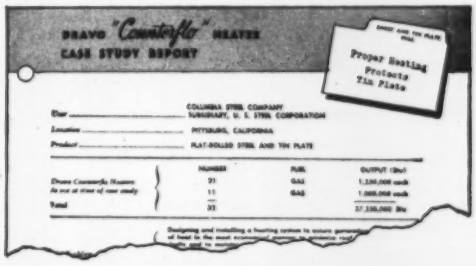
PROCESS DRYING AND HEAT CURING: In industrial production of products such as plastics, wood, rubber, paper, fibers, and ceramics, Dravo Heaters have often increased production due to faster, more efficient drying and curing.



TEMPERING OF MAKE-UP AIR: Where the necessary removal of noxious fumes or harmful dusts from the air makes comfort heating for workers difficult, Dravo Heaters warm replacement air and keep temperatures constant.



TEMPORARY HEATING: Dravo Heaters provide comfort heating and increase worker-efficiency during building construction and can keep ground temperature above freezing for pouring and setting concrete floors during cold weather.



COMFORT HEATING LARGE BUILDING AREAS: Garages, diesel repair shops, auditoriums, etc. with large open spaces are heated comfortably and easily . . . Dravo Heaters provide quick, automatically controlled, low-cost heat.

DRAVO HEATERS OFFER YOU:

- **LOW INITIAL COST**—Users report 30% to 60% savings over "wet-type" systems.
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- **LOW OPERATING COST**—Direct-fired . . . burn gas or oil . . . readily converted . . . minimum efficiency 80%.
- **AUTOMATIC OPERATION**—on-off or modulating controls . . . no constant attention required.
- **LONG SERVICE LIFE, LOW MAINTENANCE**—Stainless steel combustion chamber eliminates refractory lining.
- **SAFETY**—Approved by American Gas Association, listed by Underwriters' Laboratories, Inc.; Dravo standardized safety control circuit accepted by Factory Mutual Engineering Division.
- **MOBILITY**—Can be moved to any location.
- **FLEXIBILITY**—When floor space is limited, can be wall-hung or suspended from trusses in any position.

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—BUILDINGS

R. I., Warwick—SCHOOLS—B.A. 6/25—City, Herbert C. Libby, School Comn., c/o Chas. B. McKay, secy., Warwick, elementary school, Linderwood Ave., Norwood, $500,000; elementary school, Killey Ave., near Church and Warren Aves., $300,000. Plans deposit $75 each. Harkness & Geddes, 726 Industrial Trust Bldg., Providence, archts., Architects Collaborative, 96 Mt. Auburn St., Cambridge, Mass., assoc. archts. CD 3/18.

BUILDINGS

LOW BIDS AND CONTRACTS

E. J. Pinney Co., Inc., 220 Dwight St., Springfield, Mass. CA $545,150. Jewish COMMUNITY CENTER, Dickinson St., SPRINGFIELD, MASS. Jewish Community Center of Springfield, 130 Maple St., Springfield, Mass. CD 4/3, under LB.

▲ **Fusco-Amatruda Co.**, 59 Amity Rd., New Haven, Conn. LB $3,687,000 est. $3,700,000. PHA Conn. 4-7 368 HOUSING units, Elm-Haven-Ashmun-Webster and Danal Sts., NEW HAVEN, CONN. City, New Haven Housing Auth., 195 Church St., New Haven, Conn. Bids May 28. CD 5/5.

▲ **Bartlett & Brainard Co.**, 103 Woodbine St., Hartford, Conn., CA. $1,474,712 est. $1,500,000. James Talcott Junior HIGH SCHOOL addn. and alterations, 899 S. Quaker Lane, WEST HARTFORD, CONN. Town, Supt. Schools, 51 Memorial Rd., West Hartford, Conn. Bids May 8. CD 5/15 under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

▲ **D. C., Wash.**—B.A. 6/30—Dist of Col., Govt., Dir. of Constr. 499 Pa. Ave. N.W. incinerator bldg. No. 3 and, installation of 2 travelling cranes in proposed incinerator at northeast corner W. Va. Ave. and Mt. Olive Rd. N.E. $2,000,000. Plans deposit $25, Municipal Architects, Municipal Center, archts. CD 3/9/53.

BIDS ASKED—BUILDINGS

▲ **N. Y., New York**—LIBRARY, etc.—B.A. 6/26—New York Public Library, Astor, Lenox & Tilden Foundation, 476 Fifth Ave., New York, Zone 36, Donnell Free Library and reading room, at 20-30 W. 53 St., $1,200,000. CD 12/4/46.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Nicholas Di Menna & Sons, Inc.**, 1515 Blondell Ave., New York 61, N. Y., LB $2,738,238, Cont. 1, Oak Wood Beach Intercepting Sewers, Oak Wood Beach Sewage Treatment Works, Richmond Boro., RICHMOND, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids May 27. CD 4/27.

▲ **NEW JERSEY**—N. J. Hy. Auth., State Hy. Dpt., Office Bldg., 1035 Parkway Ave., Trenton.
Geo. M. Brewster & Sons, Inc., 275 W. Ft. Lee Rd., Bogota, N. J. CA $3,932,653 grading, drainage, paving 4.5 mi. Garden State Parkway from Main St., Matawan to Holland Rd. incl. 5 bridges and culvert, Matawan, Raritan and Holmdel Twps., Contr. 25, Monmouth Co. Bids May 14, awarded May 28. CD 5/19, under LB.

▲ **NEW JERSEY**—N. J. Hy. Auth., State Hy. Office Bldg., 1035 Parkway Ave., Trenton.
Villa Contg. Co., Inc., 233 North Ave., Westfield, N. J. CA $1,776,529. grading, drainage, fdns., paving 4.3 mi. of Garden State Parkway from Seal Girt Rd. to Rte. 33, Wall Twp. and New Shrewsbury, Contr. 26, Monmouth Co. Bids May 7, awarded May 28. CD 5/19, under LB.

▲ **NEW JERSEY**—N. J. Hy. Auth., State Hy. Office Bldg., 1035 Parkway Ave., Trenton.
Eastern Engineering Co., 4 N. North Carolina Ave., Atlantic City, N. J. CA $2,295,592 grading, drainage for Sect. 10 of Garden State Parkway from Mullica River interchange, Port Republic to East Greenbush Rd. in Bass River Twp., Contr. 33, Atlantic and Burlington Counties. Bids Apr. 30, awarded May 28. CD 5/5, under LB.

▲ **NEW JERSEY**—N. J. Hy. Auth., State Hy. Office Bldg., 1035 Parkway Ave., Trenton.
Ell-Dorer Contg. Co., 644 Nye Ave., Irvington, N. J. CA $1,106,662. structures for Garden State Parkway at Asbury Ave. West Park Ave. Wyckoff Rd. and Central R. R. of N. J., Pine Brook Rd., New Shrewsbury, Contr. 41, Monmouth Co. Bids May 14, awarded May 28. CD 5/19, under LB.

▲ **Charles H. Tomokins**, 907 16 St. N.W., Wash., D. C. CA $1,500,000. bridge, causeway, linking ocean Beach Maryland with mainland, spanning Sinepuxent Bay, MARYLAND. Ocean Bridge Corp., c/o J. E. Greiner, engr.-archt., 1201 St. Paul St., Baltimore, Md. Awarded June 1.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Florgate Park Homes**, c/o John W. Burton, archt., 163-18 Jamaica Ave., Jamaica, N. Y. Owner Builds. $1,700,000. 106 HOUSES, 30-acre tract, Hempstead Turnpike, Bethpage Parkway, BETHPAGE, N. Y.

Scarsdale Constr. Corp., 304 Ardsley Rd., Scarsdale, N. Y., CA. $735,150, general constr. Barnum Woods Grade SCHOOL, EAST MEADOW, N. Y. Bd. Educ., Union Free School Dist. 3, East Meadow, N. Y. Bids Apr. 22.

▲ **Colmar Constr. Co.**, 364 Gold St., Brooklyn, N. Y. CA $1,800,450, general constr., East Meadow HIGH SCHOOL, EAST MEADOW, N. Y. Bd. Educ., Union Free School Dist. 8, East Meadow, N. Y. Bids May 7.

Filber Homes, c/o A. H. Salkowitz, archt., 37-60 82 St., Jackson Heights, N. Y., Owner Builds. $800,000. 50 HOUSES, Front St. between Newbridge and Merrick Aves., EAST MEADOW, N. Y.

▲ **Beverly Hills Homes**, c/o Siegel & Rapp, archts., 89 Arleigh Rd., Great Neck, N. Y., Owner Builds. $4,000,000. 125 HOUSES tract Remsen Rd. in Kings Point Sect. GREAT NECK, N. Y.

Byrne Constr. Co. Inc., 290 Robineau Rd., Syracuse, N. Y., CA. 5878,386, general constr., Central grade and HIGH SCHOOL and bus garage, GROTON, N. Y. Bd. Educ., Central School Dist. 1, Town of Groton, Groton, N. Y. Bid Apr. 24. CD 4/16.

▲ **Garden & Forest Houses**, c/o Oscar Silverstone, archt., 153 Pierrepont St., Brooklyn 2, N. Y. Owner Builds. $3,000,000. six story 300-family garden APARTMENTS, 118 St. and Metropolitan Ave., KEW GARDENS, N. Y.

▲ **Marlane-in-Massapequa Homes**, c/o Max Rosenfeld, archt., 89-31, 161 St., Jamaica, N. Y. Owner Builds. $1,500,000. 128 HOUSES, Unqua Rd. and Sunrise Hy. MASSAPEQUA, N. Y.

▲ **Hamilton Park Homes**, c/o Charles Wood, archt., 630 Broadway, Amityville, N. Y. Owner Builds. $1,500,000. 114 HOUSES, 31-acre tract, Sunrise Hy. MASSAPEQUA, N. Y.

▲ **Kessler, Wohl Assoc.**, c/o Greenberg & Ames, archts., 565 Fifth Ave., New York 17, N. Y. Owner Builds. $12,000,000. two 12-story APARTMENTS, one 16 story bldg. for 900-families, west side of York Ave. between 63 and 64 Sts., NEW YORK, N. Y.

▲ **Central Park Manor Homes**, c/o Alwin Cassens Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. $1,000,000, 93 HOUSES on tract on Central Park Rd., PLAINEDGE, N. Y.

▲ **Birchwood Park Homes**, c/o Stanley Klein, archt., 89-31 161 St., Jamaica, N. Y., Owner Builds. $7,000,000. 520 HOUSES on 125-acre tract, South Oyster Bay Rd., Northern State Parkway, SYOSSET, N. Y.

▲ **Williston Park Homes**, c/o W. P. LaVallee, archt., 164-09 Hillside Ave., Jamaica, N. Y. Owner Builds. $2,500,000. 120 HOUSES, 30-acre tract Foch Blvd. and Center St., WILLISTON PARK, N. Y.

▲ **Sordoni Constr. Co.**, 45 Owens St., Forty Fort, Pa., CA. Approx. $3,000,000. brick, steel OFFICE and (3) service bldgs., ERIE, PA. Pennsylvania Electric Co., 222 Levergood St., Johnstown, Pa. CD 4/21.

Henry Shenk Co., 1114 Sassafras St., Erie, Pa., CA. $872,100. 1 story bsmnt., 165x165 ft., brick, steel frame department STORE, ERIE, PA. W. T. Grant Co., 130 W. 42 St., New York, N. Y. CD 10/2.

▲ **Turner Constr. Co.**, 1500 Walnut St., Phila. 2, Pa., CA. $7,095,000, HOSPITAL and NURSES QUARTERS, for Eastern Pa. Psychiatric Institute, PHILA., PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. Bids May 6. CD 5/12, under LB.

Navarro Corp., 6219 Broad St., Pittsburgh, Pa., CA $900,000. LABORATORY bldg., engineering shop and development bldg., Monroeville, PITTSBURGH, PA. U. S. Steel Corp., 525 Wm. Penn Pl., Pittsburgh, Pa. CD 3/4.

SOUTH

BIDS ASKED—BUILDINGS

▲ **Va., South Norfolk**—SCHOOL—B.A. 6/25—South Norfolk School Board, Municipal Bldg., 2 story, masonry South Norfolk High School, $1,000,000. A. Ray Pentecost, Jr. Nick Wright Bldg., Norfolk, Va., archt. CD 7/31/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

VIRGINIA—State Dpt. Hys., 1221 E. Broad St., Richmond Va.,
Norfolk Contg. Co., P. O. Box 4525, Norfolk, Va., LB, $793,554, underpass at Brambleton Ave. and Norfolk-Western Ry., Norfolk Co. Bids May 28. CD 5/11.

VIRGINIA—State Hy. Dpt., 1221 E. Broad St., Richmond, **C. G. Poole, Inc.**, Capital Club Bldg., Raleigh, N. C. CA $510,513, flexible pave, drainage, etc. 5.17 mi. Rtes. 19 and 460, Proj. 1992-11, North Tazewell, Tazewell Co. Bids May 19. CD 5/25 under LB.

▲ **WEST VIRGINIA**—W. Va. Turnpike Comn., 1340 Wilson St., Charleston,
Groves Lundin & Cox, Wesley Temple Bldg., Minneapolis, Minn., LB $3,917,738, grading, drainage Mile 56.4 to 67.2 and substructures bridges 59, 60, 61 and 71, Kanawha Co. Bids June 2. CD 5/8.

KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort, **Ruby Constr. Co., Inc.**, Madisonville, Ky. CA $856,274. overhead, bit. conc. base, binder and surf. Class I 0.404 mi., Eastern Pkwy in Louisville (Louisville Paducah Rd.), U-UG-26 (17), SP 56-158, Jefferson Co. CD 5/28, under LB.

KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort, **Hart & Hart**, Providence, Ky. CA $572,066. grading, drain, wid'n. bit. conc. surf. Class I 9.002 mi., Henderson-Morganfield Rd., AF 62 (3), SP113-87, Union Co. CD 5/28, under LB.

▲ **O. R. Burden Constr. Corp.**, 6702 E. 21 St., Tulsa, Okla., CA. $1,889,000, 55-mi. 18-in. crude oil pipe line, Longview East, TEXAS to Louisiana State Line, LOUISIANA. Humble Oil & Refining Co., Humble Bldg., Houston, Tex. CD 3/26.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **E. I. dupont deNemours & Co.**, duPont Bldg., Wilmington, Del., Owner Builds. $4,000,000. coal-partial COMBUSTION UNIT, BELL, W. VA.

Fairfax Constr. Co., Riverland Rd. and West Dixie Hy. Fort Lauderdale, Fla. Owner Builds. $900,000 121 RESIDENCES, FORT LAUDERDALE, FLA.

▲ **Sam Levine**, 1127 N. E. 163 St., North Miami, Fla., CA, $1,462,080, RESORT, 9500 Collins Ave. MIAMI, FLA. William F. Chatlos, 355 Ocean Blvd. Golden Beach, Fla. Rader Engrg. Co., DuPont Bldg. Miami, Fla., engrs. Igor B. Polevitzky, 250 N. E. 18 St. Miami, Fla., archt. CD 5/26, under CA.

Fidelity Constr. Co., 460 N. W. 79 St., Miami, Fla., CA, $750,000, 72 RESIDENCES, MIAMI, FLA. Gardner-Built Homes, c/o contractor.

▲ **Farnsworth & Chambers Co.**, P. O. Box 332, New Orleans, La. CA $1,269,000. 2 DORMITORIES, NEW ORLEANS, LA. Tulane University, 6823 St. Charles Ave. New Orleans, La. Bids May 21, awarded May 29. CD 5/26, under LB.

MIDDLE WEST

BIDS ASKED—BUILDINGS

Mich., Detroit—SCHOOL—B.A. 6/17—City, Bd. Educ., 1354 Broadway, First unit, brick, steel, concrete George Washington Carver Elementary School, $700,000, Malcomson, Fowler & Hammond, 1217 Griswold St., archts. CD 8/20/52.

Ind., Leo—HIGH SCHOOL—B.A. 6/23—Cedar Creek Twp. School Holding Corp., Alvan A. Thorp, pres., Leo, mail Grabill, 1 and 2 story irregular constr. Junior and Senior High School, $500,000. Plans deposit $50. Zurbuch, Inc., 202 Paramount Bldg., Fort Wayne, engrs.

▲ **Wis., Milwaukee**—HIGH SCHOOL—B.A. 7/20—Bd. School Dirs., 1111 N 10 St., Zone 3, 1 and 3 story, 450x700 ft. Northwest Senior High School, $4,000,000. Grassold & Johnson & Assoc., 734 N. Jefferson St., Zone 2, archts. CD 7/3/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—Ohio Turnpike Comn., 139 E. Gay St., Columbus Zone 15,
Bethlehem Steel Co., E. 3 St., Bethlehem, Pa. CA $2,876,492. 10,115 tons of steel for bridges, Contr. M-8, M-11 and M-12, Loraln, Erie and Sandusky Counties. Bids May 27. CD 5/19.

Haines & Haines, 2526 S. Main St., Elkhart, Ind., LB. $335,359, Div. 1; $273,241, Div. 2, interceptor sewers, ELKHART, IND. B. P. Wks., Mayor Danielson, Chmn., City Hall, Elkhart, Ind. Consoer, Townsend & Assoc., 351 E. Ohio St., Chicago, Ill., consult. engrs. CD 5/11 under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **L & R Constr. Co.**, 6609 Latta Pl., St. Louis 21, Mo. CA $1,200,000. Decatur-Macon HOSPITAL addn., DECATUR, ILL. Macon County Hospital Assn., Decatur, Ill. CD 5/20 under LB.

Brockmeyer Constr. Co., 634 N. Grand Blvd., St. Louis 3, Mo., CA $606,241, HIGH SCHOOL, DUQUOIN, ILL. DuQuoin Twp. High School Dist., 100 E St., DuQuoin, Ill., Bids May 13.

Henry W. DeKoning Constr. Co., 320 Municipal Court Bldg., Ann Arbor, Mich. CA $649,800. general contract, brick, steel Slawson Junior High SCHOOL addn., alterations, ANN ARBOR, MICH. City, D. E. H. Williams, secy., School Bd., Ann Arbor, Mich. Bids May 13. CD 4/15.

Barton-Malow Co., 2631 Woodward St., Detroit, Mich. CA $745,000, brick FACTORY John R. and 12 Mile Rd. Royal Oak Twp., DETROIT, MICH. Bendix Aviation Corp., Skinner Purifier Div., 1500 Trombly St., Detroit, Mich. CD 5/27.

▲ **Practical Home Builders**, 13440 W. Seven Mile Rd., Detroit, Mich. CA $2,300,000. 288 garden APARTMENTS, 45-acre site, Nine Mile Rd. and Coolidge St., North West corner, OAK PARK, MICH. Schostak & Co., 3415 Cadillac Tower, Detroit, Mich. CD 4/9.

▲ **O. W. Burke Co.**, 1032 Fisher Bldg., Detroit, Mich. CA $3,400,000. 4 story, brick, steel, conc. HOSPITAL incl. power house, 13 Mile Rd. and Woodward St., ROYAL OAK, MICH. Oakland Hospital, E. A. Tomlinson, pres., General Motors Bldg., Detroit, Mich. CD 5/26, under LB.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

▲† **Okla. Enid**—HANGAR—B.A. 6/18—U. S. Eng., Box 61, Tulsa, Zone 2, Lot 1, maintenance hangar, E-15, $400,000-$750,000; Lot 2, base maintenance hangar, shop, gasoline storage, utilities, etc., $750,000-$1,200,000, Inv. No. Eng. 34-066-53-127. Vance Air Force Base.

BIDS ASKED—BUILDINGS

▲ **Colo., Denver**—SCHOOLS—B.A. 6/17—School Dist. No. 1, City and County of Denver, 414 14 St., 1 story, Goldrick Grade School addn., $6,24,095; 1 story, Johnson Grade School addn., $585,844. J. Roger Musick, Colorado Bldg., engr.-archt. CD 1/23.

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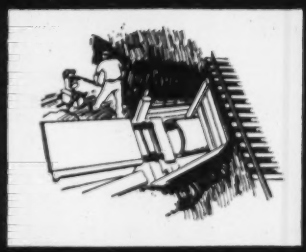

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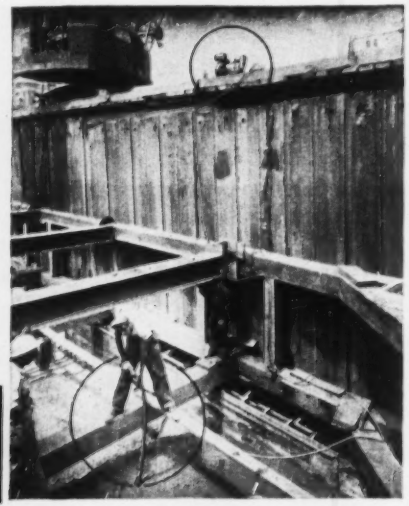

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Minn., Minneapolis—SCHOOL—B.A. 6/25—Bd. Educ., 807 Broadway N.E., E. H. Engr, archt-engr., G. R. Arneson, city purch. agt., 201 City Hall, Elizabeth Kenny Grade School at 57 St. and Emerson Ave. South, $900,000, Haxby, Bissell & Belair, 1211 Nicollet Ave., Minneapolis, archts. CD 4/16/52.

▲ Mo., Kansas City—SCHOOL—B.A. 7/2—Bd. Educ., c/o Dr. G. Dewey, Smith, asst. supt., Library Bldg., Intercity High School, $2,500,000, Keene & Simpson, 15 W. 10 St., Kansas City, Mo., archts. CD 1/13.

Tex., Odessa—CHURCH—B.A. 7/7—First Baptist Church, Odessa, general constr., plumbing, heating and air conditioning, electrical work for church auditorium and sunday school. $500,000. Plans deposit $25. Wilson & Patterson, 202 Majestic Bldg., Fort Worth, archts. CD 8/3/51.

▲ Mo., Kansas City—AUDITORIUM PARKING—B.A. 10715—City, c/o Reed McKinley, dir. P. Wks. Dpt., City Hall, municipal auditorium parking facilities, plaza, $3,300,000, Gentry & Voskamp, 4 W. 13 St., Kansas City, Mo., archts. CD 2/12.

▲ Tex., Pasadena—REFINERY UNIT—Bids Asked—Warren Petroleum Co., City National Bank Bldg., Houston, hydrocarbon-oxidation refinery unit, $1,500,000. CD 12/31/51.

▲ Tex., Tyler—REFINERY—Bids Asked—McMurrey Refining Co., Tyler, 8,000 bbl. per day feed preparation and decarbonizing unit, $975,000; 10,000 bbl. crude oil topping unit, $850,000. Blaw-Knox Constr. Co. Chemical Plants Div., 540 E. 5 St., Tulsa, Okla., engrs. CD 5/28.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Henry Carlson Co., 110 E. 10 St., Sioux Falls, S. D., LB $507,650, general constr.;

C. J. McDermott Co., Sioux Falls, S. D., LB $178,000, mechanical work;

Power Engr. Co., 544 Benson Bldg., Sioux City, Ia., LB $48,795, electric for water treatment plant, SIOUX FALLS, S. D. City, City Hall, Sioux Falls, S. D. Bids May 18. CD 4/30.

▲† Industrial Constr. Co., 1627 W. Main St., Oklahoma City 3, Okla., LB. $2,447,819. est. $2,603,492, warehouse, Tinker Field, Eng-34-066-53-102. OKLAHOMA CITY, OKLA. U. S. Eng., Box 61, Tulsa 2, Okla. Bids May 28. CD 5/18.

▲ † Shaw & Estes & Olmstead, 1407 S. Akard St., Dallas, Tex., LB $1,496,378. est. $1,500,000. conversion of 10 test cells Bldg. 214 and 215, Inv. No. (IFB) 34-601-53-575, Tinker Air Force Base, OKLAHOMA CITY, OKLA. U. S. Govt., c/o A. F. Contg. Officer, Tinker Air Force Base, Oklahoma City, Okla., Bids May 29. CD 5/6.

▲ R. H. Fulton & Co., Lubbock, Tex., CA. $42,500,000. 285 mi. 20, 24, 26 and 30 in. gas line from Rankin near Midland to Denver City, Yoakum Co. TEXAS. Northern Natural Gas Co., Permian Basin Pipe Line Co., Aquila Court Bldg., Omaha 1, Neb. and El Paso Natural Gas Co., Bassett Tower, El Paso, Tex. CD 10/9/52 and 5/14.

† Western Contg. Corp., 400 Benson Bldg., Sioux City, Ia. CA, $776,771, concrete type apron paving Kirtland Air Force Base, Inv. No. Eng 29-005-53-69 ALBUQUERQUE, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Mar. 4. CD 3/11, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Naugle-Leck, Inc., 714 Baker Bldg., Minneapolis, Minn. CA $2,300,000. general contract, 5 story Baker Arcade OFFICE addn., MINNEAPOLIS, MINN. Baker Properties Inc., M. T. Baker, pres., Eighth St. and Marquette Ave., Minneapolis, Minn., Larson & McLaren, 1901 Foshay Tower, Minneapolis, Minn., archts.

▲ Standard Constr. Co., 607 Hamm Bldg., St. Paul, Minn. CA approx. $1,000,000. general contract 1 story, 230,000 sq. ft. foods PLANT, incl. warehouse, Como Ave. between Fifield and Stella Aves., ST. PAUL, MINN. Fairway Foods, Inc., 2285 University Ave., St. Paul, Minn. CD 10/28/52.

A. H. Neumann & Bros. Inc., 514 Hubbell Bldg., Des Moines, Iowa, LB $988,173. general constr. May Goodrell Junior HIGH SCHOOL, DES MOINES, IA. Bd. Educ., 629 3 St., Des Moines, Ia. Bids May 19. CD 4/29.

▲† S. Patti Constr. Co., 1340 Admiral Blvd., Kansas City, Mo. LB $3,692,340. est. $4,400,000. 530,000 sq. ft. federal records CENTER, Bannister Rd. and Missouri Pacific tracks, KANSAS CITY, MO. General Service Admin., c/o W. A. Halloway, reg. dir., Public Bldgs. Service, 18 and F Sts. N. W., Wash. 25, D. C. Bids May 29. CD 5/6.

▲ H.B.C. Development Co., Sedalia, Mo. Owner Builds. est. $1,000,000. duplex HOUSING development, 44-46 Terrace N. and N. Troost St., N. Virginia St., NORTH KANSAS CITY, MO.

▲ Texoma State Park Bd., c/o Oklahoma State Park Bd., Oklahoma City, Okla., Own Forces. $1,686,000. 106-room LODGE, DURANT, OKLA.

Inwood Constr. Co., 507 Trinity Blvd., Dallas, Tex., CA. $589,400, OFFICE and warehouse, DALLAS, TEX. Radal Corp., 1101 S. Akard St., Dallas, Tex. CD 5/27.

G. W. Mitchell, 811 American Hospital & Life Bldg., San Antonio, Tex., LB $665,167. OFFICE and warehouse, SAN ANTONIO, TEX. Straus-Frank Co., 301 S. Flores St., San Antonio, Tex. Bids May 26. CD 5/6.

State Bd. Examiners, Helena, Mont. rejected bids May 26, 3 story state LABORATORY, HELENA, MONT. LB $687,480. CD 4/29.

† **Campbell & Kay**, Box 4091, Station A, Albuquerque, N. M., LB $558,329, BUILDING No. 287, Inv. No. 193-53-23, ALBUQUERQUE, N. M. U. S. Atomic Energy Comm. Box 5900, Albuquerque, N. M. Bids May 28.

▲ **Dresser Engineering Co.**, Masonic Bldg., Tulsa, Okla. CA. Design and construct natural gas plants, $875,000, Plant No. 1; $1,200,000 Plant No. 2; $775,000, Plant No. 3; $1,400,000, Plant No. 4. Grand total $4,250,000 area of HOBBS, N. M. Permian Basin Pipe Line Co., Hobbs, N. M. (Subsidiary of Northern Natural Gas Co., 2223 Dodge St., Omaha, Neb.).

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Calif., Santa Ana**—B.A. 6/24—Orange County Sanitation Dist. 1, 2, 3, 5, 6, 7 and 11, 1104 W. 8 St., 30 m.g.d. sewage treatment plant, Newport Beach. $1,000,000. Plans deposit $25. Harrison & Woolley, and Headman, Ferguson & Carollo, 308 W. 5 St., engrs. CD 3/10/49.

† **Calif., Miramar**—STORAGE FACILITIES—B.A. 7/7—Dpt. Navy, San Diego, aviation field storage facilities at Naval Supply Depot (Point Loma) and at Naval Air Station, NOY 76761, Spec. 37412, $750,000. Plans deposit $80. CD 1/8/51.

BIDS ASKED—BUILDINGS

Utah, Logan—SCIENCE BLDG.—B.A. 6/23—Utah State Bldg. Bd., State Capital, Salt Lake City, agricultural science bldg., Utah State Agricultural College, $700,000, Karl Schaub & Son, Logan, archts. CD 3/23.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Westinghouse Electric Corp.**, Union Bank Bldg., Pittsburgh, Pa. LB. $4,299,822, four generators for Chief Joseph Dam, Bridgeport, WASHINGTON, U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids June 1. CD 5/6.

CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento.

G. M. Carr & Batti Rocca, 2333 Burbank Ave., Santa Rosa, Calif. LB $70,133, rein.-con. girder bridge across Gilbert Creek. Bids May 27. CD 5/8.

† **CALIFORNIA**—Bureau P. Rds., Dpt. Commerce, 1101 Flood Bldgs., San Francisco.

Ball & Simpson, 685 Delaware St., Berkeley, Calif. LB $856,972. grading, surf. 4.233 mi. Proj. Calif. FH 38-1, Sonora Pass, Stanislaus National Forest, Tuolumne Co. Bids May 26.

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles.

Fredrickson & Watson Constr. Co., 873 81 Ave., Oakland, Calif. CA $1,085,489. hy. constr., Santa Barbara Co. CD 3/17, under LB.

▲ **CALIFORNIA**—State Div. Hys., P. Wks. Bldg., Sacramento.

Piombo Constr. Co., 1571 Turk St., San Francisco, Calif. LB $3,749,132. grading, surf. 5 mi., 6 bridges widen 1 bridge, between 16 Ave. and Branston Rd., San Mateo Co.

Ukropina-Polich-Kral & John R. Ukropina, P. O. Box 105, San Gabriel, Calif. LB $1,277,501. grading 3.5 mi., 6 bridges between Roseville and Placerville, Placer Co.

Edw. Keeble, Rte. 4, Box 64, Tully Rd., San Jose, Calif. LB $316,057. grading, surf. 1.6 mi. near Laguna Creek, Santa Cruz Co.

Fredrickson & Watson & M & K Corp., 873 81 Ave., Oakland, Calif. LB $239,922. grading, surf. 1.4 mi. lighting etc., between Hesperian Blvd. and Harder Rd., Alameda Co.

Brown-Ely Co., P. O. Box 474, Corte Madera, Calif. LB $90,549. grading, surf. 1.3 mi. near Belvedere, Marin Co. Bids May 27. CD 5/8.

▲† **Guy F. Atkinson Co.**, Box 259, Long Beach, Calif. CA. $1,728,776. Pacoima Wash Channel, Lopez Dam to Tujunga Wash. Proj., CIVENG. 0-353-53-38, CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids May 8, awarded May 28. CD 6/2, under LB.

▲† **Standard Dredging Corp.**, 108 W. 6 St., Los Angeles, Calif. CA $1,837,865. shore protection dredging Naval Air Missile Test Center, Port Huememe Harbor, CIVENG 04-353-53-32, POINT MUGU, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Apr. 30, awarded May 25. CD 5/7 under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Irvin Talboe, Provo, Utah, CA, $488,500, general contract, high SCHOOL, TOOELE, UTAH. Tooele Co. Bd. Educ. Tooele, Utah. Bids May 5. CD 4/27.

Lovell Constr. Co., 12510 15 Ave., N.E. Seattle, Wash. Day Labor. $607,500, 45 HOMES on 4 and 5 Aves., N.W. and N. 193 St., SEATTLE, WASH.

K. G. Bitter, 4421 Ingraham St., Pacific Beach, San Diego, Calif., CA, $500,000. 2 story bsmnt. OFFICE and auditorium. SEATTLE, WASH. Sailors Union of the Pacific, 2700 1 Ave., Seattle 1, Wash.

▲ **American Lumber Mills**, 1108 Burlingame Ave., Burlingame, Calif. Own Forces. est. $15,000,000. 2,500 HOMES subdivision, SAN BRUNO, CALIF. CD 3/3.

Vance M. Brown & Sons, Inc., 351 Pepper Ave., Palo Alto, Calif. CA $489,750. SCHOOL, SOUTH SAN FRANCISCO, CALIF. South San Francisco School Dist., 500 El Camino Real, South San Francisco, Calif. John Lyon Reid, 1069 Market St., San Francisco, Calif., archt. CD 9/20/51.

Briefs from the YEOMANS GUARD

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VA's new discount rules: will they cripple VA loans?

The Veterans Administration's new rules on discounting new mortgages (ENR May 28, p.86) may cut down substantially on VA loans. In fact, at a recent Washington meeting, directors of the National Association of Home Builders took an even dimmer view than that: They said the new rules will bring VA loans to a halt, nullifying the effect of the recent rate increase.

VA's tightened rules put a legal ban on mortgage discounting arrangements that had been used in many areas to support construction borrowing while the allowable VA interest rate was held down to 4%.

VA's objective was to close all loopholes that allowed a builder to pay or absorb mortgage discounts in excess of the fees and charges expressly permitted by the regulations. What VA wants to guard against are extra costs to the builder that cause him either to cut corners on construction quality or to boost his selling price. Either way, of course, the costs are passed on to the buyer.

VA people call attention to the fact that the new rules are similar to those that the Federal Housing Administration has had for years. Now that the rate on VA paper has been boosted to 4½%, they think the crackdown on discounting is justified and that it won't put any real damper on VA financing.

However, many Wall Street observers think that VA hasn't allowed sufficiently for the fast rise in all interest rates during the last couple of months. They believe that government-guaranteed mortgages, even at the 4½% rate, will be getting stronger competition than in past years from conventional mortgages and other long-term investments.

• **Legitimate discounts**—VA's new rules continue to allow two forms of discount. In addition to interest, lenders may charge up to 2½% of the money actually borrowed on a construction loan. And lenders may charge home buyers a fee up to 1% of the face value of a permanent mortgage. VA permits a lender who makes both types of loan on a property to charge both discounts. FHA allows the same fees; but one lender can't collect both of them.

There were other—and more serious—differences under the former VA rules. FHA regulations prohibited the builder from absorbing any mortgage discount costs. But VA until last month had never specifically banned such devices as repurchase agreements whereby the builder either absorbed a discount or paid a service fee—sometimes both.

With the FHA rate at 4½% (before the recent increase to 4½%), these devices were not so necessary in bringing out FHA mortgage money. But for VA paper, builders in many parts of the country had to use them in order to get the firm lenders' commitments that had to precede construction borrowing.

• **Repurchase agreement**—Under a repurchase agreement, the builder put up a deposit—usually about 5%—with the lender. He agreed (1) to forfeit the discount if the lender could not sell the mortgage at par within a stated period, ordinarily four months, or (2) to buy back the mortgage at par. In the second case, the builder himself would then sell the mortgage for what he could get.

This kind of arrangement was easily made and manipulated when a builder owned a mortgage company. One of the purposes of the new VA restrictions is to remove the incentive for these builder-owned mortgage companies.

At the present time, a builder is required to certify that he is not paying or absorbing any forbidden fee, charge, or discount either directly or through a wholly or partially owned subsidiary or affiliate.

Warehousing fees and commitment fees are expressly prohibited in the new certification that a builder must sign. Before the VA rate boost, in those parts of the country where VA money was scarce a large builder or his mortgage banker would arrange with a big Eastern bank, for example, to make a firm commitment for the mortgages on a group of houses that the builder wanted to start. With that commitment, the builder usually could borrow his construction money locally. An interest rate of 5% is permitted on construction loans, in addition to the flat 2½% in allowable fees and charges.

• **Warehousing**—For the so-called warehousing service provided by the big bank, the builder ordinarily paid a fee of 1 to 2%. In addition, he agreed to forfeit up to about 5%, usually, if he failed to find another taker for the completed home loans within a stated period and the bank had to sell them at a discount. Bankers are said to have been lenient about extending the time, when necessary, for builders to find mortgage buyers. As a result, a builder rarely had to pay the discount to the bank, though he may have absorbed a smaller discount elsewhere in order to sell.

VA people expect the mortgage market to get easier, eliminating any need for warehousing. They think builders will find more lenders who not only are willing to originate VA loans but also want to keep the completed mortgages in their portfolios.

There is nothing in the new regulation to prevent a mortgage banker or other loan originator from making a warehousing arrangement of his own if he wishes. The only prohibition is against the builder's participating in the deal or absorbing any part of the cost. If a mortgage banker failed to get a firm commitment for the mortgages, from a lending institution, he could protect himself by entering into a warehousing agreement with a bank. That would limit any possible losses to him, and probably he could absorb a 1% discount if he is making both the construction loans and the permanent loans on the houses.

Figures under fire

Rated low by experts, U. S. construction data to face slash in appropriations

The U. S. Government is a great compiler of statistics. But the data it collects on construction are generally rated by experts as the poorest for any major industry. And Washington's construction statistics are going to get worse, unless Congress changes its mind about appropriations.

Statistical programs of all kinds are getting rough treatment on Capitol Hill. The House knocked out the five-year Census of Business, which among other things would have turned up some new basic facts about the construction industry. Then, by a narrow margin, the Senate voted to restore this program.

The House also axed a proposal by the Bureau of Labor Statistics to sur-

vey housing starts outside metropolitan areas. Congressional attacks are also being made on the Office of Statistical Standards in the Budget Bureau, which has been trying to improve construction data.

It has been recognized for years that government construction statistics were inaccurate and poorly devised. When the Hoover Commission on Government Organization looked at federal statistics five years ago, it said construction was a "major problem" and inadequately covered. It estimated that a reasonably accurate index of construction costs would run about $800,000 a year, and that a good job of keeping track of volume of construction would cost from $3 million to $5 million. Cost of the two programs might be around $7.5 million today.

Since the Hoover report, construction statistics have become worse. Walter E. Hoadley of Armstrong Cork, an expert in the field, says the quality of figures is poorer now than at any time in the postwar period.

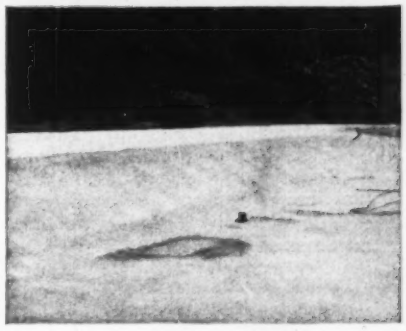
Here's how some of the major statistics stack up, as seen by Hoadley and other experts.

New construction—Figures are prepared jointly by Commerce and Labor departments, and issued monthly. Basic data are based chiefly on building permits, and contract awards reported by private companies. Then adjustments are made for factors like permit valuation and actual cost, jobs canceled after permits were issued, and for work not included in permits or reports of contract awards.

The result is a mixture which varies from good reporting in some areas, like public utilities, to what Hoadley calls "almost unalloyed crystal gazing" for farm construction.

A special study by the Bureau of Labor Statistics has indicated that new construction is probably underestimated by around 13% in these figures, and that repairs and maintenance are probably underestimated by about 20%.

Housing starts—Statistics are compiled by BLS. The basic data are building permits, adjusted by very much the same factors used for new construction estimates. This gives at least a good start for areas in which permits are required, but does not cover many of the important new outlying areas. BLS figures about a third of the housing starts are outside areas requiring permits. It makes an estimate of starts in those areas now by sampling 32 counties a month, and



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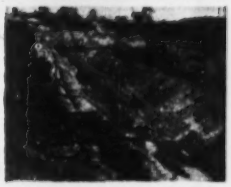
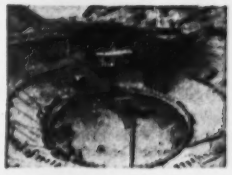
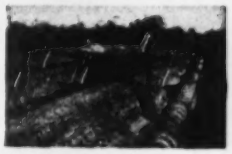


BUILDINGS



SEWERAGE or any other type of wet work



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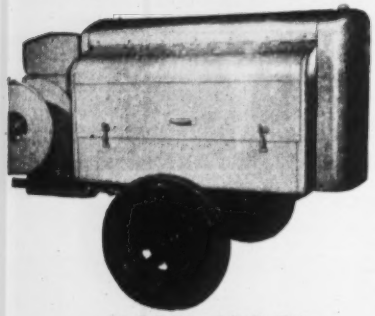

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building up the sample to a national estimate.

This method—a combination of permits issued and a sampling of non-permit areas—is sound enough but BLS has never had the funds to make it work accurately. For instance, its adjusted factor for the difference between permit valuation and actual cost is based on out-dated information. In addition, the present sampling of non-permit areas is too small to give accurate results.

Construction costs—The Department of Commerce publishes a composite cost index which is a combination of privately developed estimates of costs in various types of construction. But because of the great variety in the industry a single cost index of this kind doesn't mean much. There's no way to adjust a single index to widely varying efficiency of management. Statisticians aren't sure how to tackle this particular problem even if they had the money.

Mortgages—Compiled by the Home Loan Bank Board, figures include only non-farm mortgages of $20,000 or less, and come in from only about half the states. They don't provide any breakdown between new construction and remodeling, or between types of building. Figures also come in from FHA, Veterans Administration, Fannie Mae and the Public Housing Agency. Statisticians can piece this information together into a fairly good picture of construction credit. What's lacking, though, is a clear indication of whether credit is freely available, or hard to get, at the local level. A quick change in the availability of credit, either way, would not be caught in the present reporting system.

$2.4 Billion by '56

That's what power companies are planning for future construction work

The electric utilities of the U.S. have a lot of work for the construction industry between now and the end of 1956, according to the semi-annual power survey published last week by the Edison Electric Institute. They plan to spend about $12 billion to boost generating capacity by more than 50% of what it was at the end of last year. ENGINEERING NEWS-RECORD estimates that approximately 20% of this $12 billion will be for construction, as distinguished from equipment and other capital outlays.

At the end of last year, the electric power industry had total generating capacity of about 81.4 million kw. By the end of 1956, capacity is projected at 125.5 million kw, an increase of more than 44 million kw in four years. The purpose: to meet greatly expanded demand for power with a more comfortable margin for emergencies than now exists.

Shortages of materials, however, may delay this mammouth program. The survey committee of distinguished power company executives which made the survey said that lack of materials during the last two years has caused serious "slippage" in the original expansion programs. Shortages have showed up both in manufacture of heavy power equipment and in materials for field construction. The result, according to the committee, is that it is "highly questionable" whether this program can be carried out.

In 1952, the survey says, actual expansion of capacity fell short of planned expansion by 3 million kw. In other words, projects which would have provided 3 million kw of additional capacity were not finished on time, and are now scheduled to be finished this year. In addition, it now appears that projects totaling 1.7 million-kw capacity which were previously scheduled for this year will not be ready. That leaves 11.6 million now on the docket for this year, 11 million kw for next year, and about 9.4 million for 1955.

• **Tentative**—These schedules are extremely tentative. According to the survey committee, it is "highly problematical" just how much of the 1953 program will be finished on time. The year is off to a bad start. Out of 2.5 million-kw capacity scheduled to go into operation during the first quarter, less than half, or 1.2 million, actually made the grade.

The survey committee does say that the equipment situation has "greatly improved" for manufacturers. Some, however, are still having trouble getting certain steel items. Nickel and nickel alloys are particularly short, with little relief in sight. Manufacturing facilities have improved, shortening delivery periods for some kinds of equipment. The committee notes, though, that much of the construction time lost because of short supplies can never be made up.

Of course, another way in which the industry could catch up with estimated future demand would be to reduce its estimates of what that future demand will be. The committee report notes that since the Korean war

began the industry has greatly increased its estimates. When fighting started in June 1950, the industry had 10 million kw of new capacity scheduled to come into commercial operation after April 1, 1951. But when this date rolled around, orders for 30 million kw were outstanding. And of course plans for expansion have increased since then.

• **Lower sights**—Lately, the power survey committee has been lowering its sights on future demand. Last October, it estimated that December peak load in 1953 would be 84.3 million kw. Now it's estimating about 1.5 million kw less, or down about 2%. In December 1952, the actual peak load turned out to be 3 million kw, or 4% less than had been estimated only two months before. The survey attributes this to: (1) Unusually warm December weather in many parts of the U.S., and (2) the fact that power users in the Pacific Northwest had to cut their use of electricity because of poor hydro conditions, caused by inadequate rainfall.

However, the expansion program is not only trying to keep up generating capacity with estimated future demand, but to provide a wider safety margin between capacity and peak load. The utilities would like to see an 18% margin between capacity and December peak demand, and hope to reach this by the end of 1956. Last December, the margin was 11.7%. By the end of this year, the margin would be 14.6% if generating capacity and demand for power turn out as projected.

New construction climbs in May to 5-month record

Expenditures for new construction put in place during May were $2.9-billion, 10% above the previous month and 6% above May 1952. That's the preliminary estimate of the Bureau of Labor Statistics and the Building Materials Division of the Department of Commerce. Total construction was $2.9 billion.

For the first five months, construction was a record $12.6 billion, up almost 6% over the similar 1952 period. Nearly all of this gain was in the $8.7 billion spent for private construction. Public outlays for new construction, totaling $3.8 billion, were only slightly above last year.

The government statisticians indicated that the rise over April might have been greater if the weather had not interfered. Most of it took place

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in private residential construction and in road building, and yet those categories did not climb as much as usual during May.

Total private expenditures were up 8% from April, to almost $2 billion while public construction climbed 13% to $933 million. Private residential construction rose almost 9% to $987 million, and was 7% higher than in the corresponding month of last year. Commercial building, at $128 million, was at the highest monthly rate in two years. Industrial construction, at $190 million, was down slightly from April, but for the first time in 11 months, construction in this category was above the same month in the previous year.

Highway expenditures climbed almost 50% to $250 million, pulling the total for the first five months slightly above the similar 1952 period.

Other five-month comparisons between this year and 1952: Private residential building, up almost 9%; commercial building, up 49%; industrial, down about 3%; military and Naval, up 6%. There was an interesting gain of 56% in non-housekeeping residential building—motels, hotels, dormitories, etc.—which totaled almost $100 million.

Bond prices drop so low that the Fed moves in

Last week, the government bond market sank to its lowest levels in many years. Then the Federal Reserve Board, which for months has been carefully staying out of the market, came in and bought enough securities to create new confidence.

What does that mean to construction men? It means a lot, because the government bond market is the kingpin of the interest rate structure.

When long-term Treasury bonds which pay 2½% interest at par sink to about 90% of par, as they did last week, banks and life insurance companies which buy them at that price can get 3.20% on their money. On the other hand, they may get only a net yield of about 3.75% on VA mortgages, if they buy them at par. Although the rate on VA mortgages is now 4½%, investors often pay a ½% servicing fee to agents, and usually have internal overhead costs of somewhere around ¼%. That leaves a net yield of 3.75%, a margin of only about ½% between Treasury bonds and VA mortgages.

As a rule of thumb, banks and insurance companies often figure that they should get a new yield on mortgages about 1% higher than on long-term Treasury bonds, so ½% looks pretty slim. Of course, VA mortgages are guaranteed by the U. S., but they are not as readily salable at a moment's notice, as Treasury bonds are.

Banks and insurance companies also figure that their net yield on top-grade corporate bonds should be at least 3/10 to 4/10 of 1% higher than the yield they can get on Treasury issues.

In other words, when the bond market fell to its low levels of last week, the chances of lenders buying a large volume of VA mortgages at 4½% to finance housing got dimmer and dimmer. And the cost of corporate financing for construction, as well as the cost of municipal financing for public works, got higher and higher.

In fact, last week one company couldn't get any bids at all from investment bankers for a proposed bond issue. That happened to Arkansas Fuel Oil Corp., which had asked investment houses to bid on $22.5 million of 20-year debentures. Instead, Arkansas Fuel Oil borrowed the money for 10 years from a group of New York City banks, at 3¾% for the first five years and 4% for the last five years.

The situation got so rough that the Federal Reserve Board decided to ease the market a bit by buying Treasury bills in the open market. Bills are the Treasury's shortest-term securities, usually maturing in 91 days. That steadied the market, as investors saw that the Fed was not going to let prices go dropping indefinitely.

Business briefs . . .

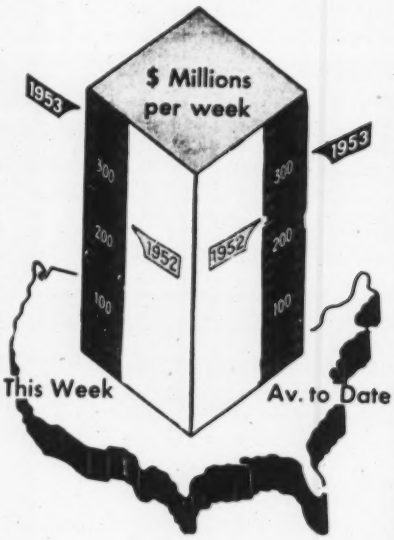
• **Lower construction volume** is predicted by H. W. Morrison, of Morrison-Knudsen Co., Inc., who sees it as a trend back to normal. He says that M-K's backlog at the end of the first quarter was $174 million, compared with a figure of $256 million a year before.

• **$5.6 Billion for construction** will be spent by the gas industry within the next five years, according to the American Gas Assn. That's a lower annual rate than in the last two years.

• **Caterpillar Tractor Co.** plans a 700,000-sq. ft. plant at an undetermined location to make motor graders and industrial wheel tractors. This will give more room to make crawler tractors and diesel engines. Total cost of the plant, to be completed by the end of 1955, will be $45 million. About $8.5 million of this will go for construction, according to ENR's estimate.

Activity This Week

As reported to ENR
(in millions of dollars)



Amount of contracts let

	This Week	Cumulative 24 wks 1953	1952	% chge
Federal	$32.2	$720.0	$343.4	+24
State and Municipal	121.9	2,307.0	1,934.1	+19
Total pub.	154.1	3,027.0	2,877.6	+5
Total priv.	214.6	4,210.0	3,234.3	+30
U. S. Total	**$368.7**	**$7,237.6**	**$6,111.9**	**+18**
Contracts by type of work				
Waterworks	$6.3	$115.7	$110.1	+5
Sewerage	5.3	179.9	110.7	+63
Bridges	10.8	337.0	169.9	+98
Highways	35.1	764.3	652.1	+17
Earthwork, Waterways	4.7	175.7	256.2	−30
Buildings: Public, excl. hsg.	69.9	810.8	828.5	−2
Housg., pub.	6.3	257.5	424.9	−39
Housg., priv.	101.6	1,897.0	1,358.8	+40
Commercial	24.3	513.7	291.7	+76
Industrial	35.4	1,409.7	1,322.1	+7
Unclassified	69.0	776.3	590.5	+31
Total	**$368.7**	**$7,237.6**	**$6,111.9**	**+18**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Years = 100 1953	1913	1926	1949
Construction cost	June	593.35	285.22	124.39
	May	589.21	283.23	123.52
Building cost	June	426.65	230.63	121.28
	May	426.47	230.54	121.23
Volume	May	499	203	144

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  Engineering News Record
  330 W. 42nd Street
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Bids: June 22, 1953

Erection of Two River Piers—for Bridge Connecting Packer Avenue-Gloucester City Bridge Known as Contract No. 1

DELAWARE RIVER PORT AUTHORITY
ADMINISTRATION BUILDING
CAMDEN, NEW JERSEY

Sealed bids will be received for the erection of two river piers, known as Contract No. 1 at the office of the Secretary of the Delaware River Port Authority, Administration Building, Bridge Plaza, Camden, New Jersey until 1:30 P. M. (Eastern Daylight Time) June 22, 1953 at which place and time they will be publicly opened and read by the Authority.

A more complete description of the work and full information for bidders are given in the Contract Documents and Specifications for this Contract, which may be obtained upon a deposit of $10.00 which will be remitted upon receipt of bid or the return in good condition of the copies so taken within thirty days after the opening of bids.

Each proposal must be accompanied by a certified check in the sum of $230,000 payable to the Delaware River Port Authority and drawn upon a National or State Bank or Trust Company having an office or place of business either in Philadelphia, Pennsylvania or Camden, New Jersey, and must not be enclosed with the sealed bid. The Surety's consent must be shown. The bidder to whom the contract is awarded will be required to furnish a Performance and Labor and Materialmen's Bond in the sum of 100 percent.

The Authority will afford prospective bidders an opportunity to inspect the site of the work.

The Authority reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the contract only to those experienced in this class of work and to the bidder whose proposal is deemed by the Authority to be most advantageous to the public interest.

DELAWARE RIVER
PORT AUTHORITY
JOSEPH K. COSTELLO, Secretary

Bids: July 3, 1953

Construction of Dam and Appurtenant Work at Putnamville Reservoir Salem and Beverly Water Supply Board, Beverly, Massachusetts

NOTICE TO CONTRACTORS

Sealed bids for constructing earth dam, dikes, spillway, and appurtenant work at Putnamville Reservoir, largely in the town of Danvers, Mass., will be received at the Council Chamber, City Hall, Salem, Mass., until 12 o'clock noon, Daylight Saving Time on July 3, 1953, and then will be publicly opened and read aloud.

Drawings and contract documents may be examined at the office of Metcalf & Eddy, 1300 Statler Bldg., Boston, Mass. Copies may be obtained on deposit of $50 per set, refundable on prompt return in good condition.

Each bid must be accompanied by a certified check or bid bond for $90,000 subject to conditions stated in contract documents.

No bid may be withdrawn within 30 days after opening of bids. The Board reserves the right to reject any or all bids or accept any bid.

SALEM AND BEVERLY
WATER SUPPLY BOARD
Leo F. Barber, Chairman

Bids: July 9, 1953

General Construction Work

HOME OFFICE BUILDING . . . STATE INSURANCE FUND
199 CHURCH STREET, NEW YORK CITY
NOTICE TO BIDDERS

Separate sealed proposals covering (1) the General Construction work, (2) Heating, Ventilating and Air Conditioning work, (3) Plumbing work, (4) Electric work, (5) Elevator work (6) Escalator work, as shown on the plans, specifications and drawings and in accordance with the general conditions, Special Conditions etc., covering the erection of a home office building for the State Insurance Fund at 199 Church Street, New York City, New York, will be received by William B. Folger, Executive Director of the State Insurance Fund at his office, Room 822, 625 Madison Avenue, New York City, New York, until 2:00 o'clock p.m. Eastern Standard Time, on Thursday, July 9th, 1953, when they will be publicly opened and read.

Each proposal must be made upon the form provided therefor and shall be accompanied by a certified or cashier's check payable to The State Insurance Fund in the sum of $120,000 with respect to the proposals covering the General Construction work, $45,000 with respect to the proposals covering the Heating, Ventilating and Air Conditioning work, $30,000 with respect to the proposals covering the Electric work, $10,000 with respect to the proposals covering the Plumbing work, $30,000 with respect to the proposals covering the Elevator work and $5,000 with respect to the proposals covering the Escalator work, as a guaranty that the bidder will enter into a contract if it be awarded to him. The blank spaces in the proposal must be filled in and no change shall be made in the phraseology of the proposal. Proposals that carry any omissions, erasures, alterations or additions may be rejected as informal. Successful bidder will be required to give a bond conditioned for the faithful performance of the contract and a separate bond for the payment of laborers and materialmen, each bond in the sum of 100% of the amount of the contract. Corporations submitting proposals shall be authorized to do business in the State of New York. Drawings, specifications, general conditions and form of proposal, contract, and bonds may be examined free of charge at the following offices during regular business hours:

The State Insurance Fund
Room 822
625 Madison Avenue
New York, New York.
Lorimer Rich Associates, Architects
215 Montague Street
Brooklyn, New York.

One set of drawings, specifications, general conditions and forms of proposed contract and bonds may be obtained on or after June 3, 1953 by calling at the office of Lorimer Rich Associates Architects, 215 Montague Street, Brooklyn, New York, during regular business hours and making a deposit of $40 for each set covering the General Construction work and $25 for each set covering (1) Heating, Ventilating and Air Conditioning work, or (2) Plumbing work, or (3) Electric work, or (4) Elevator work or (5) Escalator work, or by mailing such deposit to said architects at said office; additional sets may be obtained at reproductions cost. Checks shall be made payable to Lorimer Rich Associates, Architects. Deposit shall be refunded upon return of drawings in good condition within fifteen days after opening of bids to such persons as shall have submitted bids. Deposits are not refundable to those contractors who obtain plans and do not submit bids. Reproduction costs paid for additional sets are not refundable. The State Insurance Fund reserves the right to reject any or all bids.

THE STATE INSURANCE FUND
By WILLIAM B. FOLGER
Executive Director
Dated, New York, June 1st 1953

Bids: August 3, 1953

Construction of Sanitary Sewers & Appurtenances

NOTICE TO BIDDERS

Sealed bids on eight (8) contracts will be received by the Authority of Springfield Township, Montgomery County, Pennsylvania in the Springfield Township Building, 402 Bethlehem Pike, Springfield Township, Montgomery County, Pennsylvania for the construction of approximately 29 miles of sanitary sewers and appurtenances in Springfield Township, until the time and date shown in the following schedule:

Contract #9 and Contract #10
8 P.M. E.D.S.T. July 1, 1953
Contract #10A and Contract #11
8 P.M. E.D.S.T. July 8, 1953
Contract #12 and Contract #13
8 P.M. E.D.S.T. July 15, 1953
Contract #14 and Contract #15
8 P.M. E.D.S.T. July 22, 1953

Bids will be opened and read publicly at the time and place stated above, but no bid shall be allowed to be withdrawn for a period of 60 days thereafter.

Plans, specifications and contract documents may be seen and/or obtained at the office of George E. Mebus, Consulting Engineer, Northwestern National Bank Building, Glenside, Pennsylvania. A deposit of $25.00 will be required for each set of plans and specifications for each contract, of which $20.00 will be refunded for each set upon the return of plans and specifications in good condition to the Consulting Engineer's office by 5:00 P.M. August 3, 1953.

A certified check or bid bond approved by the Authority in the amount of 5% of the amount of the total bid tendered, made payable to the Authority of Springfield Township, shall accompany each bid tendered. The certified checks or bid bonds of all but three low bidders, will be returned within forty-eight hours after the award of the contract. The certified checks or bid bonds of the three low bidders, will be returned upon the execution of the contract.

Bids shall be submitted, bound in the specifications in a sealed envelope addressed to the Authority of Springfield Township and shall be plainly marked showing the contract/s for which bids are submitted.

The Authority reserves the right to reject any or all bids and waive informalities or take such other action that it may deem to be in the best interest of the Authority, and as may be permitted by law.

Authority of Springfield Township
By Thomas Reath, Chairman

U. S. Government

St. Paul District, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota—Sealed bids will be received at this office until 2:00 P.M., C.S.T., 16 June 1953, and then publicly opened for Channel Improvement on Marsh River, Minnesota.

Department of Commerce, Bureau of Public Roads, May 27, 1953. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m., D.S.T., JUNE 24,1953, for Project IA10, Baltimore-Washington Parkway, Prince Georges County, Maryland. Bridge under Kenilworth Avenue Connection to Northbound Parkway Road. The approximate quantities of the more important items are: 21,000 cu. yd. Excavation, 2,120 cu. yd. Cement Concrete, 320,000 lb. Reinforcing Steel, 540,880 lb. Structural Steel, and 15,000 lin. ft. Treated Timber Piling. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above. H. J. Spelman, Division Engineer.

OFFICIAL PROPOSALS

Bids: June 25, 1953

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 25th day of JUNE 1953, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. NICKERSON, District Engineer, 353 Broadway, Albany, N. Y.				
Schenectady	F.A.R.C. 53-58	Schenectady-Duanesburg, Pt. 2, S.H. 5545 Project F-655(7)	2.65	Asphalt Conc. Type 1A, Opt.	$5,000 Plans $10	$95,000
Washington	R.C. 53-55	Dresden Sta-Putnam, S.H. 8225A	2.69	Asphalt Conc. Type 1A, Opt.	6,000 Plans $10	103,000
		DISTRICT No. 2				
		L. KETCHUM, District Engineer, 109 No. Genesee St., Utica, N. Y.				
Fulton	F.A.R.C. 53-56	Meco-Caroga Lake, S.H. 618 Gloversville-Meco-Phelps, S.H. 246 Project S-700(3)	3.46	Asphalt Conc. Type 1A, Opt.	10,000 Plans $10	186,000
Herkimer & Oneida	M.T. 53-11 S.T. 53-24	New York State Thwy-Mohawk Sect.-Sub. 9 (Utica West City Line-Burch Creek); No. Genesee St. Interchange; Leland Ave. & Schuyler Dyke Rd. (Co. Rd. 37)	2.93 Acc. 6.36 Thy.	9" Cem. Conc. Pavt. 2 @ 25' Var. Wide=8.62 Mi. Asp. Conc. Type 1A, Opt.=0.62 Mi. Thwy.; T.C. Graded Grav. (D.S.T.)=0.03 Mi.; Misc. work=0.02 Mi. 6 Hy. Sep. Comp. I-Beams 145.9', 137.9', 221.3', 146.6', 198.3' & 209', 6 Brs. Closed Boxes 34.3', 35.1', 30.6', 20.3', 24.4' & 25.3'	350,000 Plans $100	5,921,000
		DISTRICT No. 4				
		E. G. YOUNGMANN, District Engineer, Barge Canal Terminal, Rochester, N. Y.				
Monroe	L.O.S.P. 53-3	Lake Ontario State Pkwy. (Lowden Point Road)	0.39	Grading & F.C. Grav.=0.03 Mi. Bit. Mac. Ty. 1=0.27 Mi. Hy. Sep. Conc. Rigid Frame 83.2'	12,000 Plans $10	225,000
		DISTRICT No. 5				
		C. R. WATERS, District Engineer, 65 Court St., Utica, N. Y.				
Erie	F.A.C. 53-14	City of Buffalo: Fuhrmann Blvd. & Ramp C (Cont. 3) High Level Bridge Project U-750(6)	1.20	Cem. Conc. Pavt. (BR)=0.08 Mi. Asp. Conc. Opt. (BR)=1.12 Mi. Superstructure on 51 Span Approach Comp. I-Beams & Girders & 6 Sp. Plate Girder Bridge	370,000 Plans $100	6,676,000
		DISTRICT No. 7				
		R. W. SWEET, District Engineer, 144 Van Duzee St., Watertown, N. Y.				
Franklin	F.A.R.C. 53-54	Nicholville-Dickinson Pt. 2, S.H. 9265; Dickinson-West Bangor, S.H. 9076 Project S-305(2)	5.41	Bit. Mac. Opt. (Road Mix)	$15,000 Plans $10	257,000
		DISTRICT No. 8				
		J. S. BIXBY, District Engineer, Pleasant Valley Rd., Poughkeepsie, N. Y.				
Ulster	F.A.R.C. 53-57	Kingston-Ellenville, Pt. 3 S.H. 141 Project F-462(5)	3.11	Asp. Concrete Type 1A, Opt.	8,000 Plans $10	154,000
		DISTRICT No. 9				
		F. W. DONOVAN, District Engineer, 71 Frederick St., Binghamton, N. Y.				
Otsego	F.A.R.C. 53-53	Sidney-Unadilla, S.H. 708 Project F-420(11)	2.93	Asp. Concrete Type 1A, Opt.	8,000 Plans $10	143,000
Otsego	F.A.R.C. 53-60	Schenevus-Maryland, S.H. 319 Project F-471(8)	3.62	Asp. Concrete Type 1A, Opt.	11,000 Plans $10	208,000
Schoharie	F.A.R.C. 53-63	Middleburg-East Cobleskill-Shad. Point, S.H. 9241 Howes Cave-Cobleskill, S.H. 5286 Project F-655(6), S-389(1)	8.14	Asp. Concrete Type 1A, Opt. R.C. Slab Br. 32	100,000 Plans $25	1,885,000
		DISTRICT No. 10				
		M. E. GOUL, District Engineer, Montauk Highway, Babylon, L. I., New York				
Bronx	F.A.M.D.E. 53-5	Major Deegan Expressway Cont. 7B Project UI-UGI-1082(16)	0.44	Grading & Drainage Hy. Sep. Comp. I-Beam 99.2', Hy. Sep. Comp. I-Beam 98.7', Hy. & R.R. Sep. Comp. I-Beam 168.8'	110,000 Plans $100	2,000,000
Suffolk	C.A.P. S.P. 53-1 S.A.G. S.P. 53-1	Captree State Pkwy and Sagtikos State Parkway	9.07	8" Colored Cem. Conc. Pavt. 2 @ 62' Wide=0.31 Mi. 8" Cem. Conc. Pavt. Var. Width (Access)=0.74 Mi. Landscaping & Misc. Work=8.02 Mi.	20,000 Plans $15	370,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

R. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: June 25, 1953

BRONZE CLEANING AND MAINTENANCE WORK NEW YORK UNION MOTOR TRUCK TERMINAL Contract O & M-191 Proposal No. 130

THE PORT OF NEW YORK AUTHORITY

Sealed proposals for furnishing all labor, material and equipment for cleaning, refinishing and maintaining interior and exterior bronze at New York Union Motor Truck Terminal, 325 Spring Street, New York, will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 8th Ave., New York, 11, until 11:00 A.M. (E.D.S.T.), Thursday, June 25, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

The Port of New York Authority
Howard S. Cullman, Chairman

Bids: June 30, 1953

Water Tower Foundations and Boiler House

THE PORT OF NEW YORK AUTHORITY
HOBOKEN—PORT AUTHORITY PIERS
CONTRACT HP-110.011

Sealed proposals for the construction of water tower foundations and a boiler house at the Hoboken-Port Authority Piers at Hoboken, N. J. will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:45 P.M., Tuesday, June 30, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1110, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, June 11, 1953

Bids: July 6, 1953

NEW YORK INTERNATIONAL AIRPORT BUILDING NO. 141

THE PORT OF NEW YORK AUTHORITY
CONTRACT NYA-452.001

Sealed proposals for the construction of a manufacturing building at New York International Airport will be received at the office of the Director of Aviation of The Port of New York Authority, Room 1533, 111 Eighth Avenue, New York 11, New York, until 2:30 P.M., Monday, July 6, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Chief of Aviation Planning of the Authority, Room 1572, and copies will be furnished upon request. No deposit will be required, but the documents shall be returned in good condition, not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, June 11, 1953

OFFICIAL PROPOSALS

Bids: June 23, 1953

Route 29A(1927) Section 4, Route 29(1953)

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

Route 29A(1927) Section 4, Route 29-(1953) from One Mile North of Bryam to Kingwood Station, Grading, Kingwood Township, Hunterdon County. Length 3.025 miles. The principal items of construction are:

Estimated:
- 23,102 cu. yds. Roadway Excavation, Earth,
- 173,476 cu. yds. Roadway Excavation, Rock,
- 10,000 cu. yds. Borrow Excavation,
- 245 cu. yds. Class C Concrete in Structures,
- 5,000 lin. ft. Underdrain Type F
- 588 lin. ft. Cast Iron Culvert Pipe (various sizes)
- 4,062 lin. ft. Corr. Metal Culvert Pipe (various sizes)
- 760 lin. ft. Multi Plate Pipe Arch Culverts (7'-00" to 12'-4")
- 63 Inlets

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, June 23, 1953, at ten o'clock (10:00 A.M. EASTERN STANDARD TIME), eleven o'clock (11:00 A.M. DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: State Highway Department,
A. Lee Grover, Chief Clerk.

Bids: June 23, 1953

New Jersey Turnpike Authority

NEW BRUNSWICK, N. J.

Sealed proposals will be received by the New Jersey Turnpike Authority for:

CONTRACT NO. 106

The work to be done under this contract consists of the construction of sewage treatment facilities, at Service Area 7S located on the New Jersey Turnpike in Cranbury Township, Middlesex County, together with additions to the existing sewage treatment facilities at Service Area 3S located on the New Jersey Turnpike in Delaware Township, Camden County, including a connecting sewer from the existing building to the sewage treatment plant.

Proposals will be received at the office of the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, until 11:00 A.M. Eastern Daylight Saving Time, on the morning of June 23, 1953, at which time and place proposals will be publicly opened and read.

The receipt and opening of proposals is subject to proper prequalification of the bidder in accordance with the regulations adopted by the New Jersey Turnpike Authority. Bidders must also submit with their proposal a revised financial statement and a statement of plant and equipment.

Contract documents may be seen and may be inspected by prospective bidders during regular office hours after June 4, 1953 at the office of the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, and at the office of the Consulting Engineer, Elson T. Killam, 529 Millburn Avenue, Short Hills, New Jersey.

Contract documents will be furnished for $5.00 for each set, upon application to the Authority. The payment will not be refunded and contract documents are not required to be returned.

Proposals must be made upon the standard proposal forms in the Standard Specifications, for Construction of the New Jersey Turnpike, and must be enclosed in sealed specially addressed envelope bearing the name and address of the bidder and the number of the contract on the outside, and must be accompanied by a certified check drawn to the order of the New Jersey Turnpike Authority and a proposal bond, each for not less than five percent (5%) of the total contract price bid in the proposal, but not less than $500.00 nor more than $200,000.00 and must be delivered at the place designated above on or before the hour named. Copies of the proposal form to be used for submitting proposals, of the form for the proposal bond, of the form to be used for the financial statement and for the plant and equipment statement to be submitted with the proposal and of the specially addressed envelope are furnished in detached form with the contract documents.

The Contract will be awarded or the proposals rejected within thirty (30) days from the date of opening proposals. The right is reserved to reject any or all proposals or to accept that proposal which, in its sole judgment, the Authority deems to be in its best interests.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

June 4, 1953

Bids: June 23, 1953

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:—

Morris Avenue and Springfield Avenue

Construction of Morris Avenue and Springfield Avenue from Glenside Avenue to Broad Street in the City of Summit, Union County, Federal Aid Secondary Project No. S-125 (2). Length 1.26 miles. The principal items of construction are:

Estimated: 9,250 cu. yd. Roadway Excavation
- 30,761 Sq. yds. 5" Macadam Base Course
- 3,483 Tons Bituminous Concrete
- 2,397 L. F. Reinforced Concrete Pipe
- 13,713 L. F. Concrete Curb

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, June 23, 1953, at ten o'clock (10:00 A.M. EASTERN STANDARD TIME), eleven o'clock (11:00 DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law, and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Secondary Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements, and by P.L. 769, 81st Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, 28 Union Avenue, Irvington, N. J., and 268 N. Broad Street, Elizabeth, N. J. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars (10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special/special addressed envelopes will be furnished on application. Bids not enclosed in sealed addressed envelopes will be considered informal/and will not be opened. The right is reserved to reject any or all bids.

Signed: State Highway Department,
A. Lee Grover, Chief Clerk

Bids: June 22, 1953

Contract No. 4-A—"Reinforcing Lanes One and Eight" Delaware River Bridge

DELAWARE RIVER PORT AUTHORITY
ADMINISTRATION BUILDING
CAMDEN, NEW JERSEY

Sealed bids will be received for reinforcing Lanes No. 1 and No. 8 on the Delaware River Bridge between the Anchorages, to be identified as Contract No. 4-A, at the office of the Secretary of the Delaware River Port Authority, Administration Building, Bridge Plaza, Camden, New Jersey until 1:30 P. M. (Eastern Daylight Time) Monday, June 22, 1953 and then and there will be publicly opened and read.

A more complete description of the work and full information for bidders are given in the Contract Documents and Specifications for this Contract, which may be obtained upon a deposit of $10.00 which will be remitted upon receipt of bid or the return in good condition of the copies so taken within thirty days after the opening of bids.

Each proposal must be accompanied by a certified or casher's check in the sum of $10,000 payable to the Delaware River Port Authority and drawn upon a National or State Bank or Trust Company having an office either in Philadelphia, Pennsylvania or Camden, New Jersey and the Surety's consent must be shown. The bidder to whom the contract is awarded will be required to furnish a Performance and Labor and Materialmen's Bond in the sum of 100 percent.

The Authority will afford prospective bidders an opportunity to inspect the work to be done.

The Authority reserves the right to waive any informalities in the bids received; to reject any or all bids; and to award the contract only to those experienced in this class of work and to the bidder whose proposal is deemed by the Authority to be most advantageous to the public interest.

DELAWARE RIVER PORT AUTHORITY
JOSEPH K. COSTELLO
Secretary.

U. S. Government

St. Paul District, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota—Sealed bids will be received at this office until 2:00 P.M., C.S.T., 23 June 1953, and then publicly opened for Repairs to Ogee Section of Lock and Dam No. 1, Stage No. 3, Mississippi River, Minneapolis, Minnesota.

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:
(Not available for equipment advertising)
$1.50 cents a line, minimum 3 lines. To figure advance payment count 5 average words as a line.
POSITION WANTED & INDIVIDUAL SELLING OPPORTUNITY WANTED undisplayed advertising rate is one-half of above rate, payable in advance.
PROPOSALS, $1.50 a line an insertion.

INFORMATION:
BOX NUMBERS count as 1 line additional in undisplayed ads.

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED—RATE PER INCH:
The advertising rate is $17.10 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

Send NEW ADVERTISEMENTS: To New York City Office 330 W. 42nd St., N. Y. 36 for July 2nd issue closing June 22nd.

POSITION AVAILABLE FOR SALES ENGINEER

1. Age, 30 to 35 years with at least 5 years of successful selling experience.
2. Preferably, but not absolutely essential, applicant should have had some experience in water treatment and/or related engineering subjects.
3. It is desirable that they will have had some experience in calling on architects, engineers or some other class of technical executives.
4. Applicants should be men who have been earning in excess of $5,000 per year on an average for the last three years.
5. For a temporary period of at least 90 days, these applicants should be willing to travel away from home for a period of possibly two months at a time, with the understanding that at the end of three months' association, provided results accomplished have been satisfactory to the Company, they will be placed within that territory, which will permit their reaching headquarters on an average of every weekend.
6. Dependent upon past earning power of the applicant, a minimum salary of $5,000 per year will be paid, plus a commission. Salary plus commission will result in an earning of $10,000 to $15,000 per year. Gross sales should average between $150,000 and $250,000 per year.

Mail experience record to

J. P. Lawlor
c/o General Filter Company
Ames, Iowa

EQUIPMENT SALESMAN

With definite contractors' following, knowledge of air equipment necessary, New York Metropolitan Area and vicinity. Excellent opportunity for producer

SW-8117, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

SALES ENGINEERS

We need two men with sales experience and engineering training, preferably in civil engineering. Selected men will be given thorough training. Work will be with state and city highway officials. Some knowledge of highway construction helpful. Salary and expenses. Give full information about yourself.

RW-8048, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

ESTIMATORS

National organization requires experienced estimators. Applicants should be familiar with the construction of large industrial projects.

Engineering and Purchasing experience beneficial.

Excellent opportunity for men between 30 and 45 years of age.

Replies will be held in strict confidence and should contain a complete resume of education and experience.

P-8112, Engineering News Record
520 N. Michigan Ave., Chicago 11, Ill.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

SENIOR ENGINEER Aides and Junior Highway Engineers wanted for expanding program of State of Connecticut. Salaries start at $3900 and $4920. Apply to the office of the Personnel Director, Department 1A, State Office Building, Hartford, Connecticut.

STRUCTURAL ENGINEER: Salary Range $5044-$5876 per annum. (Appointment may be made at a higher step in the salary range depending on advanced qualifications.) To examine structural plans, both steel and reinforced concrete submitted for building permits. Must have 3 years' experience. For details write: Personnel Department, Municipal Building, Hartford, Connecticut.

CIVIL ENGINEERS; Chief of Party; and Draftsman experienced in general civil engineering and surveying office work. Submit qualifications, experience and salary requirements. W. Franklin Buchanan, C.E., 405 Main Street, Metuchen, N. J.

EXPERT, YOUNG, Male Stenographer wanted, machine or pencil shorthand, in main office of large Illinois construction company. High pay, group insurance, pension and profit-sharing plans, annual paid vacation, other unusual advantages. Replies confidential. P-8135, Engineering News-Record.

ESTIMATOR WANTED by large General Contracting Firm located in Central Illinois. Applicant to be under 40 years of age, experienced in estimating all types of General Building Construction. If interested, advise age, education, experience and salary desired. This is an excellent opportunity for competent estimator as our Chief Estimator is retiring in near future. P-8112, Engineering News-Record.

CIVIL ENGINEER wanted for design of Airfield Grading and Drainage and related work with Consulting Engineers on New York City. Permanent Position. P-8113, Engineering News-Record.

(Continued on page 110)

TEACHING POSITIONS IN ISRAEL

The Israel Institute of Technology, Haifa, Israel, proposes to appoint 1 Professor of Hydraulic Engineering; 1 Associate Professor, Senior Lecturer & 4 Instructors in Hydraulic and/or Sanitary Engineering.

Applicants should have first-rate professional and academic qualifications, be willing to integrate themselves into the life of the country and, in due course, to teach in Hebrew.

Applications with full details should be sent, for transmission to Haifa, to:

THE AMERICAN TECHNION SOC.
1000 Fifth Ave., New York 28, N. Y.

POSITIONS VACANT

Superintendent and Foreman

Experienced in construction of sewers and water mains for work in or near Indianapolis, Indiana. This is a year round position for a capable and dependable superintendent. Please give experience, age and references.

P-7901, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED

An Alert Mechanical Engineer with Some Knowledge of Electrical Engineering . . . Must Be a Good Calculator . . .

PHILIPS & DAVIES, INC.
KENTON, OHIO

WANTED—An experienced

CONSTRUCTION SUPERINTENDENT

To supervise erection of a 50,000 KW, 1450 psi addition to a power station and also a construction accountant for this work. Estimated time for construction 12 to 18 months. Construction to start January, 1954.

P-8139, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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Frequently, when there are many applicants for a position, only the most promising letters are acknowledged. The other applicants never know whether their letters reached a prospective employer or not. These men often become discouraged, will not respond to future advertisements and even question their bona fide character.

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These openings offer:

Top hourly rates
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Capable and Experienced

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Large nationally operating heavy works contractor with Main Office located in the Midwest and branch offices & equipment yards at several locations between Mississippi Valley and East Coast has need for additional personnel to replace retirements and to expand organization resulting from increased highway construction activity involving large toll road projects underway in several regions; particularly in East.
Immediate openings for:

FOREMEN Experienced for various classes of work on heavy highway grading, including rock excavation, bridge structures, paving, drilling and blasting.

GENERAL FOREMEN OR SUPERINTENDENTS Capable of directing grading and all related items.

GENERAL FOREMEN OR SUPERINTENDENTS Experienced; for structure work and paving operations.

CIVIL ENGINEERS For field lay-out work including several competent project chief engineers to take charge of necessary office engineering and negotiations with authorities controlling projects.

PROJECT MANAGERS Several assistant project managers capable and experienced in overall direction and management to assist those managers who have several projects in hand

ENGINEER-ESTIMATOR One engineer-estimator experienced in all phases who is prepared to travel when necessary to assist our local estimators.

To qualified men these positions will have a future and will be permanent. Permanent personnel participate in established pension and profit sharing trusts, group hospitalization and other benefits. All information will be kept confidential.

P-7934, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

CHEMIST

for large copper company Chile, South America. Must be experienced in analytical work of all kinds, including complete analysis of ferrous and non-ferrous metals etc. Three year contract. Transportation both ways and salary while traveling paid by Company. In reply give complete details.

P-8096, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

BRIDGE DESIGNERS and DRAFTSMEN

For Consulting Engineer's office, Location Great Lakes region.
In reply state age, education, experience and rate of pay desired.

P-8084, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

MECHANICAL FIELD SUPERVISORS

Must be qualified to supervise Mechanical and Instrumentation installations as Engineer Representative at Atomic Energy Commission project near Portsmouth, Ohio.

Steady employment on long range work program, vacation benefits, hospitalization and group life benefits available. Applicants must be citizens of United States.

Detailed work record showing construction experience should be forwarded to:

GIFFELS & VALLET, INC.
Engineers
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SUPERINTENDENTS

with substantial experience in

CONCRETE PIPE PRODUCTION

Nationally known producer of concrete pipe offers several exceptional permanent positions to experienced field men capable of supervising manufacture of concrete pressure and non pressure pipe throughout the United States. Also several openings for top-notch master mechanics preferably with previous experience on pipe machinery.

This reputable, well established Company is prepared to offer to the right men life-long secure positions, unparalleled opportunities for growth, personal recognition for individual accomplishments, generous company benefits in addition to high starting wages.

Only men eager and able to get results need apply.

P-7597, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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CIVIL ENGINEERS

for Construction and Design

Salary $3900 to $6000

Write for Information

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P-8082, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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All instructions by mail. Send today for sample lesson and complete details
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POSITIONS VACANT
(Continued from page 108)

SANITARY ENGINEER—for design of water, industrial waste and sewerage facilities for established firm of Consulting Engineers, location Ohio. Must have degree and five years of actual experience. Permanent position intended. Salary open. Submit complete resume of education, experience, references, salary requirement and availability with first letter. P-7972, Engineering News-Record.

STRUCTURAL DESIGNER — reinforced concrete for established firm of Consulting Engineers, location Ohio. Minimum six years design experience, degree required. Must be P.E. or qualified. Permanent position intended. Salary open. Submit complete resume of education, experience, references, salary requirement, and availability with first letter. P-7973, Engineering News-Record.

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SALARIED PERSONNEL, $3,000-$25,000. This confidential service, established 1929, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jire Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

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PRECAST—PRESTRESSED—Concrete. Executive Engineer seeks new association. Development, design, construction, sales of new products. Wide experience with construction industry, its problems, materials and methods. Broad civil engineering background, licensed in several states. PW-8083, Engineering News-Record.

CIVIL ENGINEER, graduate, 30, married, children, 5 years varied experience, power plant construction, party-chief and jr. eng. on large earth dam, presently design and const. eng. for city of 13,000. Desire change to more progressive and challenging field. PW-8035, Engineering News-Record.

CIVIL ENGINEER, B.S.C.E., M.S.C.E., 2 years experience in structural and civil engineering. E.I.T. Missouri. Desires to relocate West of Mississippi. All replies will be acknowledged. PW-8166, Engineering News-Record.

CIVIL ARCHITECTURAL Engineer registered N. J. 17 years diversified experience. Design and construction refinery and chemical plant structures and foundations. Experience includes reports, specifications, estimating, supervision inspection. Available June 30. PW-8104, Engineering News-Record.

GENERAL SUPERINTENDENT employed on large project nearing completion available 30 to 60 days. Heavy construction experience covers large bridge power houses industrial plants machinery erection and other types of difficult work. Can furnish excellent character and ability refereaces. PW-8098, Engineering News-Record.

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CONSTRUCTION SUPERINTENDENT. Concrete pipe manufacturer, considerable experience. PW-8116, Engineering News-Record.

ESTIMATOR—GENERAL Contractor. Experienced, quantities, price, bidding, complete handling after award, buying, subs, costs, architect. Excellent record, all types structures. Desire change, relocate. PW-8120, Engineering News-Record.

PROFESSIONAL ENGR. New York, contracting and architectural experience, management qualifications, seeking engineering business venture Florida Coast. PW-8143, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT and Engineer, seventeen years practical experience on all types buildings, heavy jobs, bridges, roads and foundations, available immediately, have good record. PW-7936, Engineering News-Record.

PROFESSIONAL ENGR. L. I. resident, desires engineering business participation Nassau or Suffolk Counties, New York. PW-8144, Engineering News-Record.

MASTER MECHANIC—graduate, 20 years experience, thoroughly capable all types heavy earth moving and contractors equipment maintenance. Master Mechanic, 33 W. Marguette Road, Chicago 21, Illinois.

INDUSTRIAL ENGINEER 35 graduate exp. widely design, estimating, construction, supervision, mechanical, structural, plant engineering, mtl. handling, machine design, piping, plant layout, methods, production. Ambitious type Seeks responsible position. Prefer South or East. PW-8156, Engineering News-Record.

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CIVIL ENGINEER—2 yrs. field, 2 years managerial experience. Estimating, making contacts, sub-contractors. Personable, good appearance. Seeks position with future. Northeast preferred. PW-8159, Engineering News-Record.

BUILDING ESTIMATOR and purchasing agent with administrative experience. Will locate anywhere in the U. S. PW-8041, Engineering News-Record.

POSITIONS WANTED

CONSTRUCTION SUPERINTENDENT — all types of Industrial and Commercial construction. Graduate Civil Engineer. 39 years old. 18 years construction experience. Presently construction superintendent Steam Electric Power Plant. Available July. PW-7974, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT and Engineer desires work in New England. Experienced industrial plants, housing, heavy construction, bridge and marine work, skilled estimator. PW-7967, Engineering News-Record.

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Designed to provide mobile facilities for maintenance and repair of construction and industrial equipment: vehicles, disaster and civil defense services, etc. Test used only, equal to new. Write
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Seven TS300 LaPlant Choate Motor Scrapers, 1951 and 1952 units in excellent condition. Available for rental or purchase. Price $15000.00 Each. (Syracuse)
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1,000 bbl. capacity, 25 cubic foot, Batcher, Dial Scale. Can be used for one or two types of cement. Immediate shipment, subject to prior sale. Excellent condition!
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Assorted Sizes—Reasonably Good Condition
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TO RENT IMMEDIATELY, OR BUY
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W-8141, Engineering News-Record
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1—Model 10B, Bucyrus Erie Shovel only, as		$ 9,000
1—Model 22B, Bucyrus Erie Shovel, Crane and Backhoe, diesel		20,000
1—Model 25, Northwest Shovel and Dragline, diesel		17,500
1—Model 6, Northwest Shovel and Dragline, diesel		27,500
1—Model 38B, Bucyrus Erie Shovel, Dragline and Backhoe, diesel		30,000
3—Model 54B, Bucyrus Erie Combination Shovels and Draglines, diesel	$46,000 to	57,000
1—Model 54B, Bucyrus Erie Shovel only, diesel		44,000
1—Model 80D, Northwest Shovel, Dragline and Backhoe, diesel		40,000
1—Model 120I, Lima Dragline only, diesel		54,000
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10—D8 Caterpillar Tractors with Cat PCUS, Dozers and Johnson Bars	$12,500 to	$ 14,000
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4—Model FU LeTourneau Carryalls, 18 to 22 yds	$4,500 to	6,000

EXCAVATING EQUIPMENT

2—Southwest Double-Drum Sheepsfoot Tampers, each	$ 1,500
2—5′ x 4½′ Double-Drum Sheepsfoot Tampers, each	1,000
1—#22 Ferguson Double-Drum Sealing Roller (smooth)	800
1—#20 Ferguson Single-Drum Sealing Roller (smooth)	400
1—5-Shank Davenport Ripper	1,000
1—9-Wheel Pneumatic-Tired Roller with 1600 x 24 tires, 45,000 lbs	2,000
1—Model 28 Caterpillar Ripper	2,750

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2—Model 9B3 McKiernan-Terry Pile Hammers, each		$ 2,000
1—Model 10B3 McKiernan-Terry Pile Hammer		2,700
1—Model No. 1 Vulcan Pile Hammer		2,000
2—Model E4 McKiernan-Terry Pile Extractors	$2,750-	3,500

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1—2,500-gal. International Sprinkler Truck, with pump	$ 2,000
2—3,000-gal. Sterling Sprinkler Trucks, with pumps, diesel, each	4,000
2—4,500-gal. Western Sprinkler Trucks, with pumps, diesel, each	5,000

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5—105′ 2-Stage Portable Air Compressors, various makes	$1,250 to	$ 1,750
3—500′ I. R. Portable Compressors with Waukesha Hesselman engines, each		4,000
3—500′ C. P. Portable Compressors with Cat. diesel engines, each		5,500
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16—Ingersoll-Rand DA35, wet type Drifters

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4—#75 Conway Muckers

For Hauling
(all 36" gauge)

6—Greensburg, 11 ton, Electric Locomotives
3—Whitcomb, 10 ton, Electric Locomotives
3—40 K.W. Battery Charging Units
2—20 K.W. Battery Charging Units
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6—2 yard Koppel Dump Cars
30—Flat Cars

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2—7300 c.f.m. Roots-Connersville Blowers
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12,000'—24" Vent Pipe, Lock Joint, 14 gauge

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2—¾ yard Hackley Pneumatic Concrete Placers
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Special Placing Equipment for Arch and Invert

Miscellaneous

25—1½" to 4" Electric Pumps
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Koehring Shovel 1½ Yd. Cat Diesel New 1951 $35,000.00
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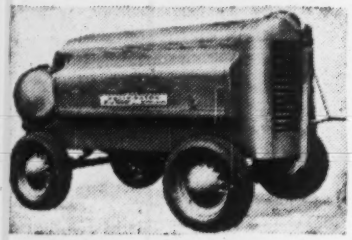

60 CFM INGERSOLL (Gas) Skids—$675
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BLOWERS: 2—36", capacity 39500 C.F.M. @ 14.7 lbs., 500 H.P. motor, 3 phase, 60 cycle, 2300 volt.

CLASSIFIERS: 4—Akins and Wemco 54" x 34 ft. Simplex, double pitch, type S, with 220/440 volt, synerogear motor and lifting device. NEW condition. Four located Nevada.

LOCOMOTIVE CRANE: Link Belt 25 ton capacity, standard R.R. gauge, gasoline powered, cast steel trucks, air brakes, with or without 1-¼ yd. Williams clam shell bucket, thoroughly modern, excellent condition. Located Minnesota. For sale or rent.

BUCKET: Blaw Knox type W730, 2-½ yd. clam shell, new condition.

DIESEL MOTOR: Caterpillar D13000 portable on skids, 122 H.P.

HOIST SPECIALS: 1—Single drum, all steel, 10" dia., 6" face, 1-⅝" rope, 600 FPM, 900 H.P., 82,000 lbs. working load. 1—Double drum 10" dia., 1200 ft 1-⅞" rope, 1400 FPM, 1200 H.P. 1—Vulcan, double drum, 200 H.P., 8" dia., 4' face, one drum clutched. 1—Single drum 250 H.P., 5'6" dia., 46" face, 1-¼" rope. All the above with all auxiliary equipment. Other Hoists 100 H.P. to 1500 H.P., single and double drum, with electrical equipment.

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Good Condition

34' boom, 27' sticks,
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1—P & H 1400 Shovel, 5 yd.
4—P & H 1055 LC Draglines, 3½ yd.
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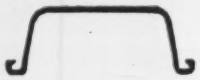

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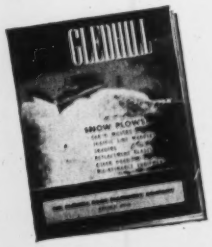

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The answer may be in a newly-developed automatic fan cut-out.

Generally speaking, for heavy-duty engines a coolant temperature of 175-185 deg. F. is optimum. Engine oil at that temperature has the best viscosity for proper lubrication. Too cold, the oil is likely to develop sludge. Too hot, the oil may become too thin.

These two problems: Reducing hp requirements of the cooling system and the maintenance of proper operating temperatures have been approached in at least three ways, one of them successful.

• **Variable pitch blades**—The fan is draining power only when moving air—turning a disk of the same size and weight requires only a negligible amount of power. Therefore, if the fan blades have a variable pitch they may be more or less folded when cooling air is not required and thus save power. Maintenance of a semi-constant engine temperature would then be accomplished by varying the pitch or "bite" of the fan blades and thereby varying the amount of air passing over the radiator fins. Obviously the mechanical aspects would be quite complicated and from all reports this system has not met with too much success.

• **Magnetic clutch**—The second method tried has used twin disks imbedded with electromagnets. One disk being powered and the other, upon which the fan is mounted, free-wheeling. When the engine is cold no current would be supplied to the driving disk, but, as the engine heats, gradually increasing amounts of current would be supplied to the driving disk. The activated electromagnets would then be surrounded by magnetic force fields that literally would grasp the magnets imbedded in the fan disk causing the fan to revolve at the correct speed—in effect an invisible, frictionless clutch plate would be developed. The major difficulties with the device were its rather cumbersome size and its inclination to pick up ferrous chips and dust that would clog the space between the disks.

• **Thermatic drive—an answer**—A third method has been developed that seems to have overcome most objections. The system is called the Schwitzer-Cummins Thermatic fan drive and uses a hydraulically actuated multiple-disk clutch and thermostat to accomplish its objectives.

• **Engine cold**—As the engine is started, oil from the lubricating system or air from the brake system is forced through a thermostatically controlled valve. The coolant being cold this valve is open and the oil or air passes through the valve and hollow fan shaft to disengage the clutch. The fan remains motionless and the engine heats up faster.

• **Engine hot**—As the engine heats up, the fan remains motionless until the operating temperature approaches the upper limit of the optimum range. Then the valve closes quickly to cut off the fluid supply, and springs automatically engage the clutch. Quick, properly-timed valve closing is necessary to prevent clutch slippage and therefore unnecessary wear. Should there be a loss in line pressure, the clutch automatically engages and thus prevents damage to the engine.

• **Savings**—By powering the fan only when necessary, the fan drive is reported to reduce fuel consumption up to ten percent and to increase horsepower up to ten percent when the fan is disengaged. Further, keeping the coolant temperature at the best range the new fan drive is said to permit savings in oil and filter costs and reduces engine wear and therefore maintenance costs.

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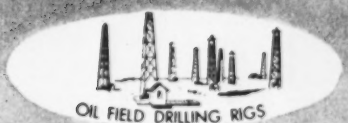
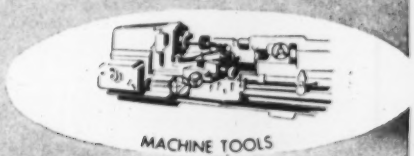


OIL FIELD DRILLING RIGS

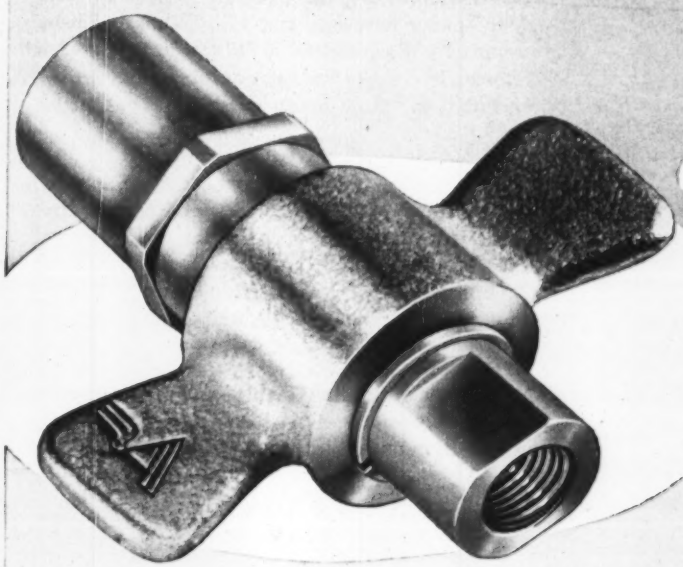


MACHINE TOOLS

MATERIALS HANDLING TRUCKS

Speed Maintenance

WHEREVER FLUID-CARRYING LINES MUST BE DISCONNECTED AND RECONNECTED



Speed **maintenance,** ***speed*** **repair operations and** ***speed*** **interchanging of accessories joined by fluid-carrying lines with Aeroquip Self-Sealing Couplings. Lines may be separated in a few seconds without loss of fluid. No air enters the system upon reconnection. There is no need to drain or prime the fluid system. One Self-Sealing Coupling takes the place of two shut-off valves.**

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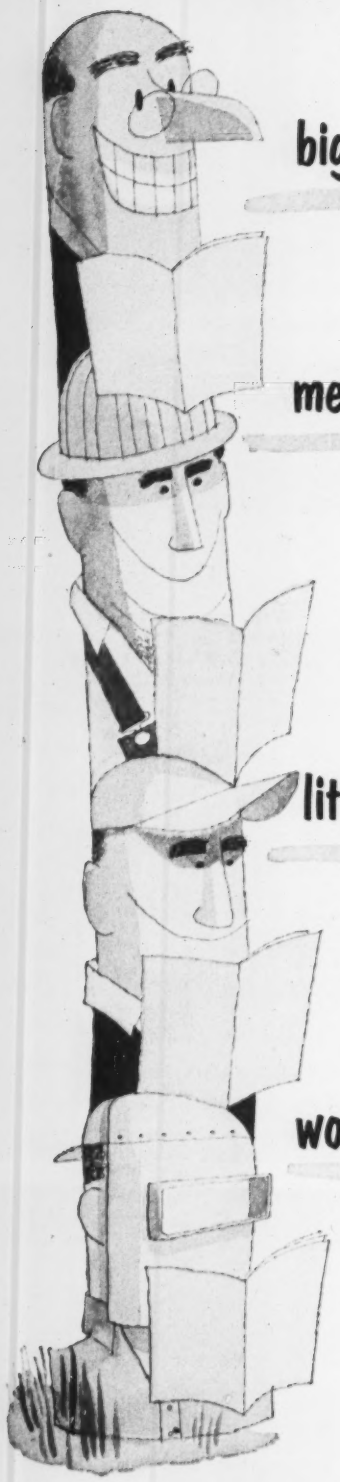

THE BIG BOSS behind the huge mahogany, the medium-sized boss pushing a fleet of bull-dozers, the would-be boss up in the ironwork, and the little bosses all over the country – they face a load of problems other than how to push a slide rule or drive a rivet.

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it takes many bosses to make one purchase

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present constant fan drive making use of the standard fan, pulley and most brackets. Mounted between the fan and the bracket the fan drive occupies the same or little more space than the constant fan drive and therefore adequate clearance between fan and radiator is maintained.

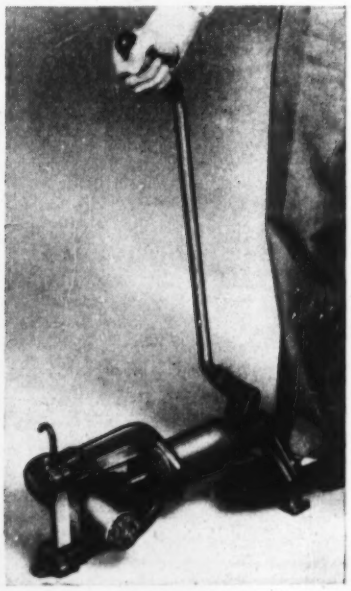
The drive has been tested on and is available for several models of standard engines including Cummins NH-600, NHB-600, NHBIS-600, NVHBI-1200; Detroit Diesel 6-71, 6-110; Buda 6DA-844, 6DAS-844, 8DA-1125; Caterpillar E-43; Waukesha 148-DKS and Hall-Scott 401. SCHWITZER-CUMMINS CO., 1125 MASSACHUSETTS AVE., INDIANAPOLIS 7, IND.

Hydraulic cable cutter boasts 5-ton shear action

With the exception of submarine power cables, lead-sheathed and power cables up to 3½ in. dia. can be sheared with little effort by a new portable cable cutter.

Cable to be cut is inserted between the cutting edge and the anvil of the 10,000-lb hydraulic jack. Pumping the swivel-type handle moves the anvil and cable against the cutting edge which is protected from damage at the completion of the cut by a brass insert in the anvil. The jack is self-retracting and may be stopped at any desired cutter opening by means of a release valve.

The whole assembly weighs 30 lbs. Cutter may be bolted if desired. H. K. PORTER, INC., 74 FOLEY ST., SOMERVILLE 43, MASS.



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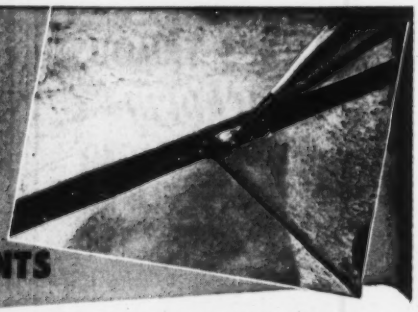

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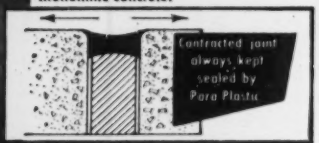

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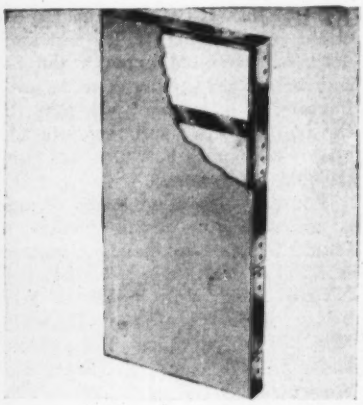
NEW PRODUCTS

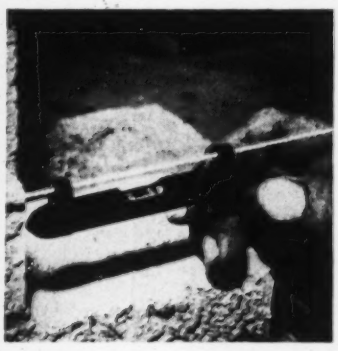


Steel-framed form reduces concrete seepage

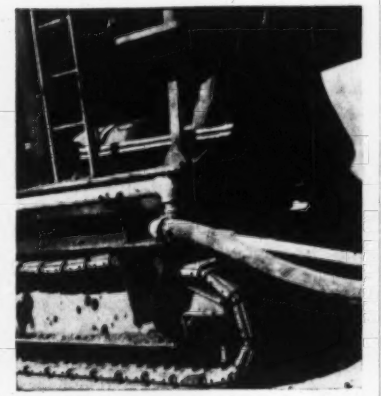
Although the Uni-Form panel was developed ten years ago, because of the war and material restrictions it has not been available until now. Consisting of a plywood panel protected by a steel tee frame, the form combines the rigidity of steel with the desired nailing surface of wood.

Besides adding rigidity, the steel frame acts as a protector for the corners and edges of the plywood to permit greater re-usage and to lower maintenance costs.

Lateral struts at the back of the form further strengthen the frame and milled tie slots assure tighter forming which will result in less concrete seepage. UNIVERSAL FORM CLAMP CO., 1238 N. KOSTNER AVE., CHICAGO, ILL.



LIGHTER THAN A PENCIL—this new plastic line level minimizes sag in long lines. Opposed-opening hooks are designed to prevent the level from falling off the line, and the bottom is flat for surface use. Empire Level Mfg. Co., 10930 W. Potter Rd., Milwaukee 13, Wis.



Rubber cushions speed paving operations

Resilient rubber vulcanized to steel plates and bolted to crawler pads permits movement of pavers over finished concrete without damaging the surface. The use of these pads eliminates the need for continually relaying protective belting and can mean considerable savings in time and labor on paving jobs.

Bond strength of over 500 psi is claimed for the B. F. Goodrich Vulcalock bonding process employed. METALWELD INC., SCOTTS LANE & ABBOTSFORD AVE., PHILADELPHIA 29, PA.

New plastic pipe for jet pump installations

Twinduit, designed exclusively for jet pump applications, consists of two polyethylene pipes extruded simultaneously and joined in alignment by a thin web of the same plastic material.

Combined in this manner the pipes can be worked into the well without

TWINDUIT is inserted in well opening.

with AN EAGLE DOUBLE WATER SCALPING TANK FINE MATERIAL WASHER COMBINATION

Inland Construction Co.'s report sounds like a "Paul Bunyan" tale, but here are the facts. Complete plant set up in three weeks to take care of material for a large Air Base contract. Over 250,000-tons of material, to specification, turned out in 90 days—trucks loaded out in 1½ minutes.

Highlight of the plant is an Eagle 32' Double Water Scalping Tank for removing excess water from two 8" pump production—and preliminary classification, with an Eagle 84" x 22' long weir Fine Material Washer-Classifier-Dehydrator for final processing.

The Eagle Washer gave Inland split-hair control of fines, washed away extraneous matter and delivered material free of excess moisture to waiting trucks. Cost-cutting flow line production with minimum original investment. No wonder so many aggregate producers are turning to Eagle Washing and Classifying Equipment, to eliminate headaches. Eagle's long experience plus thousands of installations can benefit you!

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The Owen Grapple opens *wide* to grasp *large* objects. Fast, safe operation is assured indefinitely because of the tremendous grip, scientific design and the use of the best materials available.

THE OWEN BUCKET CO.

pinching or binding and handling time is thus reduced. Availability of long lengths eliminates many joints and permits more convenient storage. Light weight and flexibility of the polyethylene also make pipe easy to use.

Twinduit is available in three sizes: 1 x 1¼ in., 1¼ x 1¼ in. and 1½ x 1½ in. Coils come in two length, 200 ft and 240 ft. YARDLEY PLASTICS CO., 142 PARSONS AVE., COLUMBUS 15, OHIO.

Volumetric fluoridizer for water plant operations

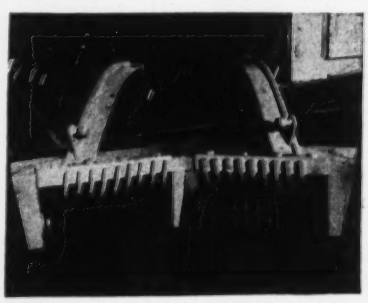
A new fluoridizer for water plants is said to offer accurate delivery of chemicals and low operating cost in a compact unit. A hopper capacity of 100 lb eliminates storing of partially emptied containers and permits long-time operation without refilling. Handling is further reduced since the material is lifted only two feet to the loading door.

A uniform rate of feed is maintained by a 40-watt synchronous motor driving a slow moving feed disk. Changes in feed rates are accomplished by a micrometer gate adjustment knob. An accuracy of three percent by weight over a 20 to 1 range is obtained by a large feeding orifice and gate adjustment calibrated to 0.001 in.

Platform scales are available with the feeder to check the actual weight loss of the chemical being fed and to eliminate the necessity of catching samples. Eductors, dissolving chambers and mixers are also available with the fluoridizer as needed. OMEGA MACHINE CO., 345 HARRIS AVE., PROVIDENCE, R. I.

Road disk attaches to grader scarifier controls

Similar to disc harrows used on agricultural equipment, the Shav-O-Disk cuts at desired depth under the full weight of the grader to which it is attached. The new road disk has a universal mounting and can there-



OPPOSED SECTIONS stop side thrust.

fore be attached to the scarifier controls of all standard makes and models of motor graders.

The disk cuts its own furrows and is of the gang type in two opposed sections to eliminate side thrust. Individual disk cleaners are hard-faced for long wear. Operation of the grader blade is not hindered by the disk.

The Shav-O-Disk is 64 in wide and the complete unit weighs 1740 lbs. T & M Mfg. Co., 1920 Niles St., Bakersfield, Cal.

New Product briefs . . .

• **Work gloves**—Ordinary canvas work gloves can now be coated inexpensively to extend their life and wearability, according to the Daps Co., 71 Grove St., Paterson 3, N. J., manufacturers of a new product called Glovex, which is applied by a small brush to the fingers, thumb and palm where the greatest wear occurs in canvas gloves. Since the material does not penetrate the canvas inside softness is maintained.

• **Powered revolving doors**—Twin Disc Clutch Company, Rockford, Ill., claims to have solved the problem of powering revolving doors to run constantly, while still maintaining adequate safety features, by the application of hydraulic coupling drives. Known as the Hydro-sheave drive, this fluid coupling, mounted between electric motor and gear reducer, is said to permit revolving doors to handle peak traffic loads, yet allow passengers to control speeds—even complete stoppage of door without overloading the motor.

• **Welding electrode**—A new general-purpose mild-steel welding electrode, designated as G-E type W-610-A, has been announced by the General Electric Company, Schenectady 5, N. Y. The new electrode is a d-c reverse polarity rod meeting AWS class E-6010 specifications.

• **Air compressor**—A new 210-cfm compressor, called the Super Chief Model 210-WDS is said to be the lightest, most compact compressor ever built of this capacity. Mounted on a high-speed two-wheeled trailer the entire unit is 145 in. long, 62 in. high and 75 in. wide and weighs 3,400 lbs. The manufacturer of the unit, Davey Compressor Co., Kent, Ohio, claims that the use of newly designed valves increases by 15 to 25 percent the amount of air delivered per pound of fuel.

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EDITORIALS

A salute to James Forgie

FIFTY YEARS AGO, on June 10, 1903, a small group of engineers assembled on the west side of Manhattan Island to break ground for the first shaft of the Hudson River tunnel for the Pennsylvania Railroad's big passenger terminal in New York City which was to be served by tunnels under both the Hudson and East rivers. Fifty years later, ground was broken for another tunnel under the Hudson River, this time for the third tube of the Lincoln vehicle tunnel.

Almost the whole record of subaqueous tunneling has been written in the 50 years between those two events. Much of it was written by some of the men who participated in the start of work on the Pennsylvania tunnels—Charles M. Jacobs, James Forgie, David Hough, Alfred Noble, Charles Harrison, and George B. Fry. They had the courage to pioneer, both in design and in methods of construction. What they learned by hard experience was passed on to the men who followed them. Today, tunnel driving through the soft silt in the bed of the Hudson at New York is tackled with confidence built on that 50-year record.

On this 50th anniversary the salutations of the construction industry go to James Forgie—only surviving member of that distinguished group—who ultimately became chief engineer of the tunnel work and has served as a consultant on many other tunnel projects during the past half century.

Engineers' discretionary power restored

OHIO'S SUPREME COURT has restored to engineers for the Ohio Turnpike Commission their powers to determine what type of pavement is to be laid on the highway the commission plans to build without having to resort to competitive bids on more than one type of pavement. That power had been taken from the commission by a finding of the Second District Court of Appeals (ENR April 2, p.21).

Unfortunately, the fundamental issue raised by that decision of the Court of Appeals has been beclouded by charges that undue influence was brought to bear on the commission to adopt portland-cement concrete. Claims also were made that the commission's consultants did not give proper consideration to the advantages of a high-type asphaltic-concrete pavement in reaching a decision to recommend portland-cement concrete to the commission. Consequently, it is difficult to discuss the basic issue without appearing to take sides in the current competition between asphalt paving interests and the cement companies to have their product adopted for such conspicuous projects as the Ohio Turnpike.

In this connection, credit should be given to the Ohio Society of Professional Engineers, which had the courage to risk being criticized for taking sides rather than stand idly by when it believed that the decision of the Court of Appeals was contrary to sound public policy.

That the Supreme Court's reversal of the lower court's finding is in the interest of sound public policy will be obvious to all who can look beyond the beclouding factors. Had the lower court's decision been allowed to stand it would have taken from the engineers of all public agencies in Ohio their powers to decide what type of structure, or material, or construction equipment should be used for each project they might undertake to build. They would have been required to make alternate designs and call for bids. In other words, the lower court held that initial price, not engineering judgment as to the summation of all factors—including initial cost—should control.

The importance of the Ohio Supreme Court's reversal of that finding transcends all other issues raised in this court fight.

A step that could be taken

NOW THAT THE ENGINEERS in Ohio have confirmation of their power to select types of construction on the basis of engineering judgment rather than price, the way has been opened for the Ohio Turnpike Commission to take a step that appears to have certain practical advantages and yet could be taken without compromise of basic principles. The step would be a decision to use asphaltic concrete to pave a considerable part of the Ohio Turnpike.

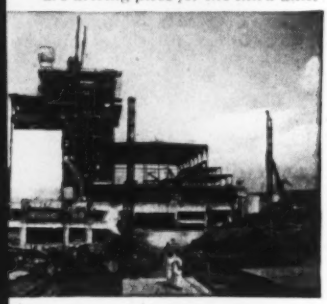
That step would have these considerations in its favor in view of the time that has been lost as a result of the legal fight: It would increase the number of paving contractors that could be employed simultaneously on the turnpike when experienced and well equipped contractors will be at a premium. It probably will sharpen the bidding on the portland-cement paving contracts yet to be let. It might result in a considerable reduction in the commission's initial investment in paving, thus offsetting in part the loss caused by the legal battle. And it would provide Ohio with a splendid test installation for comparing the qualifications of the two paving materials under very favorable conditions.

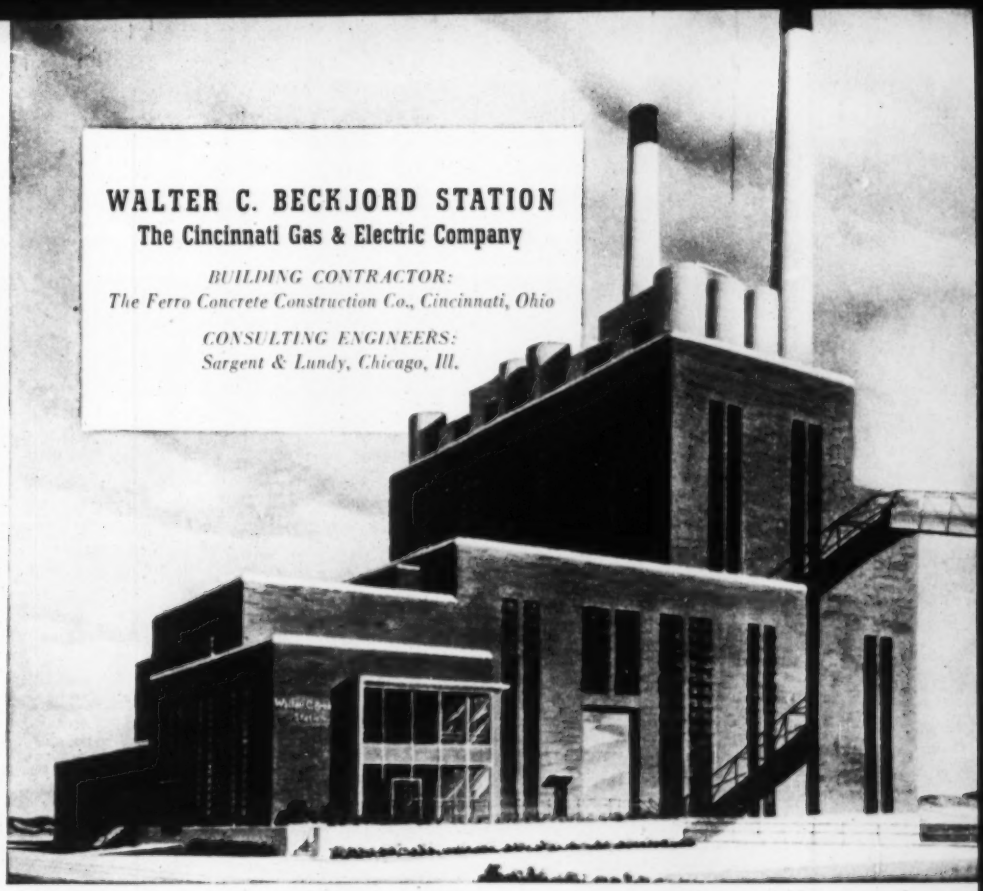
Finally, such a decision would take the sting out of claims that the commission's engineers were prejudiced in their decision to use portland-cement concrete exclusively. By specifying asphaltic concrete for part of the paving those engineers would demonstrate that although they still believe that portland-cement concrete will prove to be best in the long run, they are open-minded enough to put their engineering judgment to the test that the use of both types of pavement will provide.

Raymond Step-Taper Piles in place for Unit #3 of the Beckjord Station.

Two Raymond rigs driving piles for the condenser well and piers.

The first unit of the Beckjord Station nearing completion. Raymond rigs are driving piles for the third unit.





WALTER C. BECKJORD STATION
The Cincinnati Gas & Electric Company

BUILDING CONTRACTOR:
The Ferro Concrete Construction Co., Cincinnati, Ohio

CONSULTING ENGINEERS:
Sargent & Lundy, Chicago, Ill.

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In May 1952 the first of three new units of the Cincinnati Gas & Electric Company's new Walter C. Beckjord Station was placed in service. The concentrated loads in the boiler room area of this 100,000-kilowatt installation are carried by Gow Caissons founded on bedrock. The remainder of the building is supported on Raymond Step-Taper Concrete Piles.

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